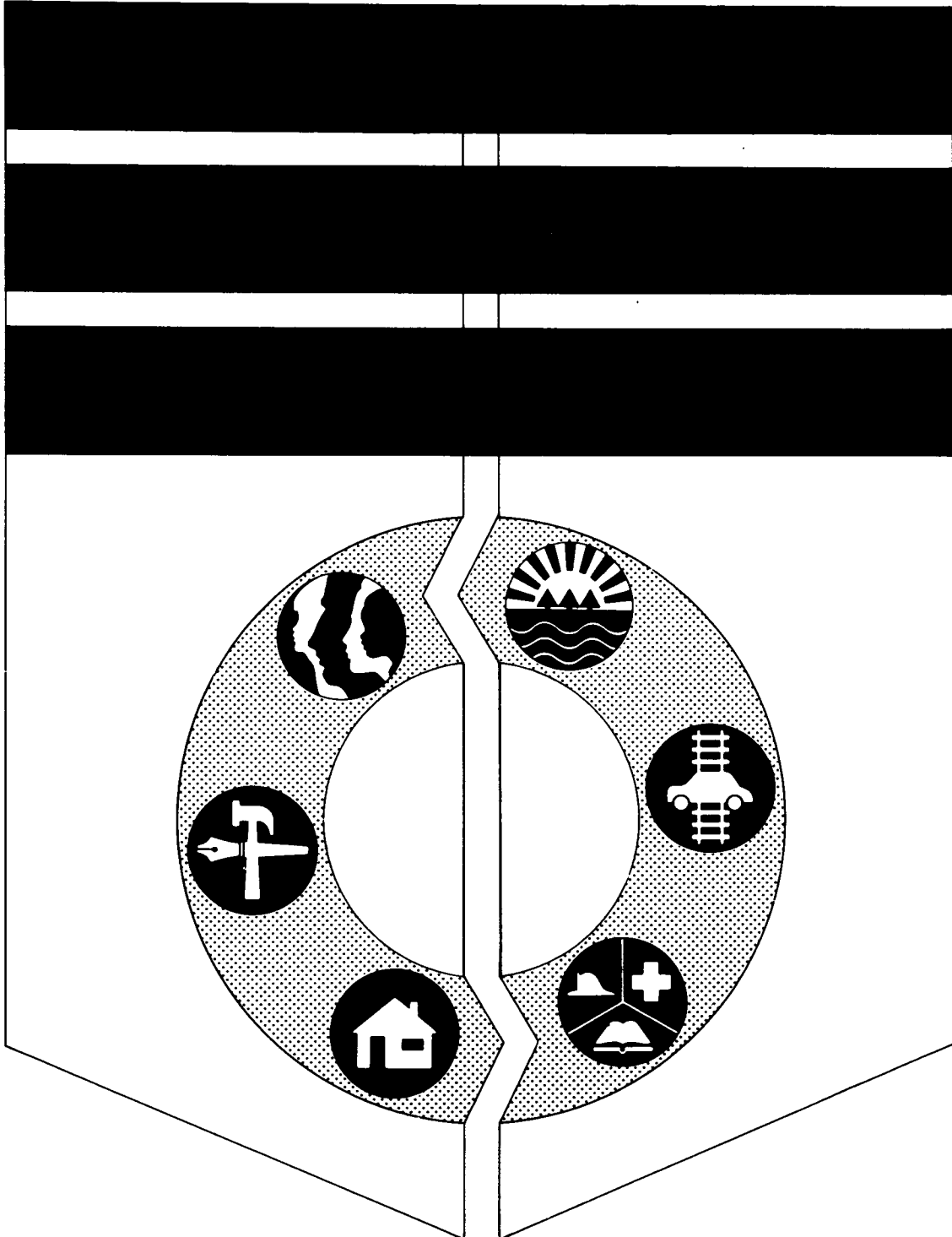


R M. Welch

1981 REPORT ON COMPREHENSIVE PLANNING POLICIES

INCLUDING
NEW GUIDELINES FOR THE ADMINISTRATION OF
THE ADEQUATE PUBLIC FACILITIES ORDINANCE



ABSTRACT

TITLE: 1981 Report on Comprehensive Planning Policies including new guidelines for the administration of the Adequate Public Facilities Ordinance.

AUTHOR: Montgomery County Planning Board of the Maryland-National Capital Park and Planning Commission.

SUBJECT: Adopted Land Use and Staging Policies, Forecasts for Households, Population and Employment, development activity monitoring and new guidelines for the administration of the Adequate Public Facilities Ordinance.

DATE: January 1982

PLANNING AGENCY: The Maryland-National Capital Park and Planning Commission
8787 Georgia Avenue
Silver Spring, Maryland 20907

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ABSTRACT: This document is intended primarily to serve the function of amending the Montgomery County Planning Board's current administrative guidelines for the Adequate Public Facility Ordinance.

As a composite document, it combines in one convenient reference volume, a set of interrelated policies and data. These provide an overview of the composite land use and staging policies of the County, especially as they apply to land use regulation.

The report includes revised forecasts for County population and housing, updated inventory data on development progress and extracts of all previously adopted staging policies as contained in various master plans, sector plans and functional plans.

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The Maryland-National Capital Park and Planning Commission is a bi-county agency created by the General Assembly of Maryland in 1927. The Commission's geographic authority extends to the great majority of Montgomery and Prince George's Counties; the Maryland-Washington Regional District (M-NCPPC planning jurisdiction) comprises 1,001 square miles, while the Metropolitan District (parks) comprises 919 square miles, in the two Counties.

The Commission has three major functions:

- (1) the preparation, adoption, and from time to time amendment or extension of the General Plan for the physical development of the Maryland-Washington Regional District;
- (2) the acquisition, development, operation, and maintenance of a public park system; and
- (3) in Prince George's County only, the operation of the entire county's public recreation program.

The Commission operates in each county through a Planning Board appointed by and responsible to the county government. All local plans, recommendations on zoning amendments, administration of subdivision regulations, and general administration of parks are responsibilities of the Planning Boards.

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EXECUTIVE SUMMARY

Introduction

This document is intended primarily to serve the function of amending the Montgomery County Planning Board's current administrative guidelines for the Adequate Public Facilities (APF) Ordinance. To that end, it proposes specifically to shift its method of measuring the adequacy of transportation facilities to a better and more comprehensive approach.

In addition, it also proposes several other specific administrative changes that affect the APF Ordinance, including: (1) the definition of a "programmed" public facility; and (2) the stage in the permit approval process at which development projects will be counted as requiring public facility capacity.

Also, in addition, it includes revised forecasts for County population, housing and employment; updated inventory data on development in progress; and a summary of all previously adopted staging policies, as contained in various master plans, sector plans, and functional plans.

As a composite document, it combines in one convenient reference volume, a set of interrelated policies and data. These provide an overview of the composite land use and staging policies of the County, especially as they apply to land use regulation. Accordingly, the document has been titled 1981 Report on Comprehensive Planning Policies.

It is intended that a document similar to this will be published by the Planning Board in the early fall of each year. This timing will permit it to serve several useful functions. One will be to update the changes in development capacity that are engendered by changes in the Capital Improvements Program, adopted the preceding May, or by other factors, such as changing behavior patterns, etc. Another function will be to update the County growth forecasts, for which the Board is responsible, on a more regular basis than has been the case in the past. Related to this will be a periodic updated report on the inventory of land and development projects in the pipeline of permit approval. The report will provide an up-to-date, single reference work, that will summarize the current status of all the various adopted or amended master plans, sector plans, functional plans, etc., especially with respect to their cumulative staging implications. By combining all these elements in one document, the public can get a better feel for the relationship between the various elements of past, present and future, that together make up the current composite fabric of comprehensive planning policy for the County.

This year's document is a first effort at putting these elements into a single document. It is anticipated that the document produced for the fall of 1982 will be an improved and streamlined version. At that time, the document also should be capable of serving the purpose, in addition to the ones mentioned above, of conveying the Planning Board's input to the Ten Year Water and Sewerage Plan, as required by state and local legislation. In the meantime, the main elements of this report are as follows.

Chapter One - Adopted Policies

This chapter contains an extract of all the major staging guidelines of the various adopted master, sector or functional plans. Due to time pressures, it is not totally complete at the present time. This chapter is for information only and no actions are required.

Chapter Two - Forecasts

This chapter contains revised forecasts for population, housing and employment, by planning areas within the County. These forecasts have been revised downward from those previously published by the Board. The adoption of this document by the Board, after public hearing, will constitute the official action of shifting from the one to the other.

Chapter Three - Status

This chapter describes the status of the land inventory and development pipeline of permit approvals. It is presented for information only, and no further actions are required.

Chapter Four-Staging

This chapter outlines the new method of calculating the adequacy of transportation facilities for Planning Board administration of the APF Ordinance. In general, it involves a shift from the previous application of a uniform and constant level of traffic service criterion to all intersections throughout the County, to a more comprehensive level of traffic service criterion, that: (1) includes transit facilities in a much better way, and (2) recognizes the transportation differences that do, and should, exist between different subareas of the County, especially with respect to their degree of transit service availability.

The new method involves the identification of "policy areas" within the County, which are organically related to both transportation and drainage-sewer areas. Each policy area is assigned a "threshold" level of development, expressed in both residential and employment terms, which is keyed to the ability of the existing and programmed transportation system to carry it without excessive stress. Subdivisions which add development above this threshold level will be judged to exceed the "adequacy" of the public facilities, and may be refused approval. Provision has been made for both (1) exceeding the threshold under special and unique conditions, and (2) stopping development short of the threshold, if it can be demonstrated that any further development will cause excessive local traffic congestion.

The specific actions generated by this chapter, after public hearing, will be the adoption by the Planning Board of the following administrative guidelines: (1) the threshold approach outlined above; (2) the definition of a Capital Improvement project as being one which is shown in the adopted CIP as having at least 50 percent of its total construction cost to be expended within the six-year time frame of the CIP; (3) the shift

from counting existing development plus outstanding record plats, to counting existing development plus sewer authorizations, as the basis for calculating policy area thresholds; (4) a set of thresholds, expressed in terms of dwelling units and number of employees, for each of the policy areas outlined herein; and (5) a discussion that accompanies each policy area, which notes certain residual problems and possible public improvements that could be undertaken to improve the situation. The last item is intended to stimulate further thought and discussion, and is not intended to be completely comprehensive or definitive.

Following the public hearing on November 30, 1981, the Planning Board will review the testimony received, and act either to adopt, or to adopt with amendment, the proposals outlined herein. At the time of this adoption, it is the Board's intention to establish an ad hoc Technical Advisory Committee, composed of County citizens representative of a broad spectrum of County interests, together with ex-officio members from appropriate County and State agencies. The committee will be asked to attend briefing sessions in early 1982, and to reconvene in early summer, to review revised threshold calculations and to share its comments with the Planning Board before publication of the Board's next annual report in the fall.

I
DEVELOPMENT
PLANS
AND
POLICIES

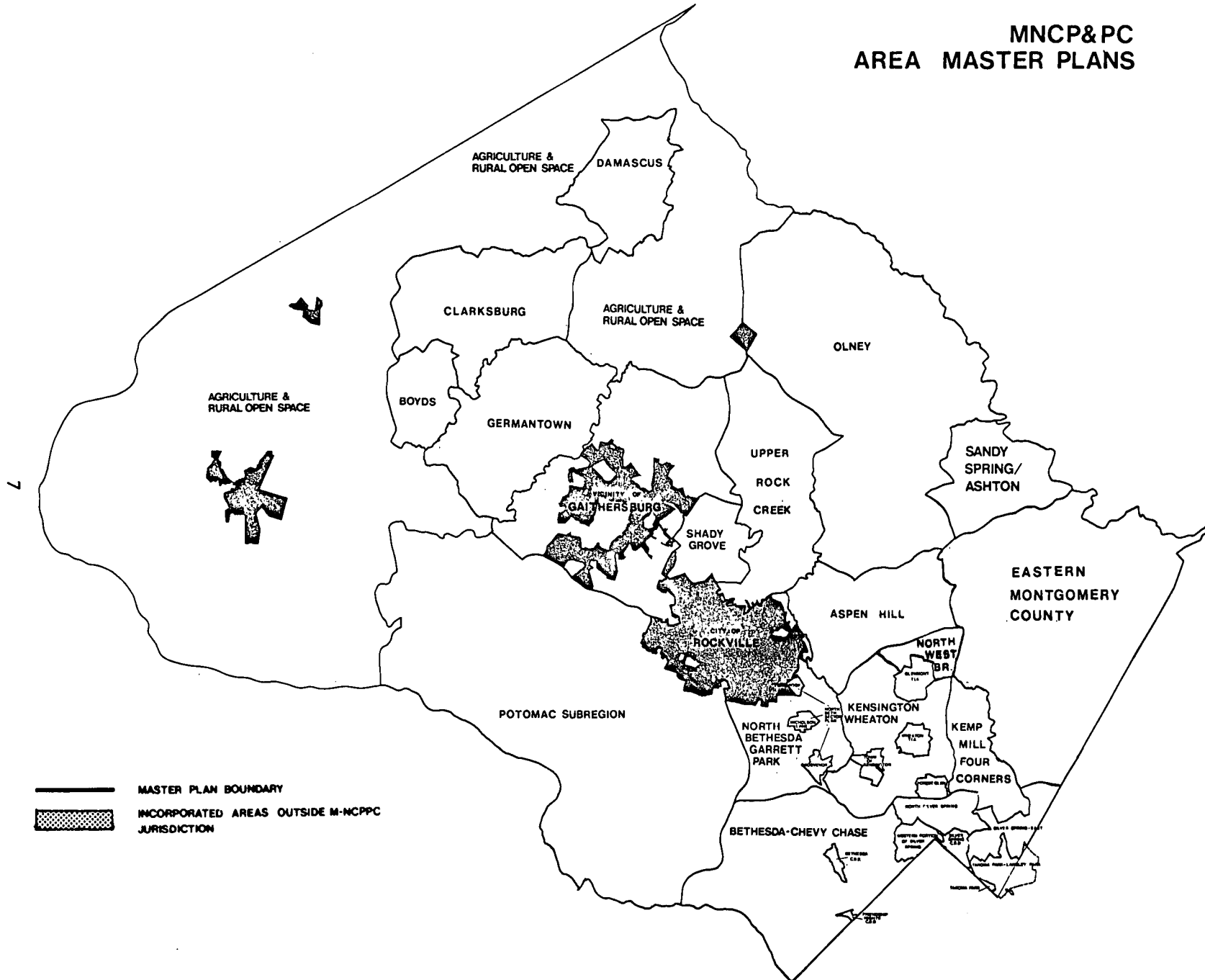
COMPREHENSIVE
PLANNING
POLICIES

All land use planning in Montgomery County is based upon the County's General Plan. The General Plan "On Wedges and Corridors" was adopted in 1964 and updated in 1969. The General Plan has been refined by the adoption of local area master plans, sector plans, subregional plans and functional master plans. The key concepts of the General Plan of urbanized corridors and non-urbanized wedges are firmly established. Wedges and Corridors is the pattern of development, fostered by the Plan's principal goal of "an efficient, pleasant, and workable pattern in future development."

TABLE 1

<u>Master Plans</u>	<u>Initial Date of Adoption</u>
Aspen Hill	December 1970
Bethesda-Chevy Chase	October 1970
Boys	May 1978
Clarksburg	September 1968
Damascus	June 1966
Eastern Montgomery County	November 1981
Gaithersburg	January 1971
Germantown	January 1974
Kemp Mill-Four Corners	May 1967
Kensington/Wheaton	September 1959
Olney	June 1980
Potomac	May 1980
Poolesville	September 1980
Rock Creek	October 1968
Silver Spring East	March 1977
Silver Spring West	April 1972
Takoma Park/Langley Park	September 1969
Upper Northwest Branch	April 1961
Upper Rock Creek	November 1967
<u>Sector Plans</u>	
Bethesda CBD	June 1976
Forest Glen	July 1978
Friendship Heights	June 1974
Glenmont	July 1978
Kensington	September 1978
North Bethesda, Grosvenor, Nicholson Lane	May 1978
Sandy Spring/Ashton Special Study	November 1980
Shady Grove	April 1977
Silver Spring	July 1975
Silver Spring North	July 1978
Takoma Park	October 1974
Wheaton	July 1978
<u>Functional Plans</u>	
Agricultural Preservation	October 1980
Bikeways	June 1978
Highways	June 1955
Rock Creek Watershed	May 1980
Seneca Creek and Muddy Branch Watersheds	February 1977

MNCP&PC AREA MASTER PLANS



EASTERN MONTGOMERY COUNTY

Adopted November 1981

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WATER SUPPLY AND SEWERAGE SYSTEM PLAN

As discussed in Chapter III, the Ten-Year Comprehensive Water Supply and Sewerage Systems Plan⁵ is the county's program for providing community water and sewerage service. This plan is implemented through the use of six service categories which provide a time frame for the provision of service. The Ten-Year Comprehensive Water Supply and Sewerage Systems Plan also contains the county's program for providing new sewer and water lines. Figure 50A illustrates the priorities of this master plan for the future provision of water and sewer service.

In general, the priorities shown on Figure 50 correspond with the water and sewer service categories in the Ten-Year Plan. Priority one would be equivalent to categories W-3, W-4, S-3, and S-4; priority two to W-5 and S-5; and priority three to W-6 and S-6 (no planned service). The timing, however, will depend upon future highway improvements discussed below in the Transportation section. In areas with little remaining highway capacity, changes to the existing sewer service categories generally will not be approved until additional highways are programmed in the CIP. The link between sewers and roads is intended to keep new development--and its impact on public facilities--in scale with the capacity of the facilities to serve the development. Once the highways are programmed, water and sewer service can be provided in accord with the priorities shown in Figure 50.

The 1980 Comprehensive Staging Plan identified the Cloverly area as one with very little remaining highway capacity. Category change requests in this area in particular, therefore, will likely be denied, and service subsequently delayed, until the necessary highway improvements are made.

Sewer service also may be used as an incentive to encourage use of transferable development rights (TDR's). The area north of Greencastle Road, east of Route 29, shown as a TDR Receiving Area on Figure 25 should be considered for a change to sewer category S-3 (priority category 1) in the event that development using TDR's is utilized. Such a category change would be considered simultaneously with the consideration of the development plan.

Land that is designated in an adopted Master Plan for automatic provision of sewer and water service upon assembly of transferable development rights shall be automatically changed from Category S-4, S-5, or S-6 to Category S-3 upon approval by the Planning Board of a preliminary subdivision plan. The subject development must have passed the Adequate Public Facilities test and secured the minimum number of TDR's permitted to be used under the Master Plan designation.

TRANSPORTATION

The Comprehensive Staging Plan recommends an interim limitation in Stage One of 2,600 net new dwelling units and 4,300 net new employees in the Fairland, Patuxent, and White

⁵ The Maryland-National Capital Park and Planning Commission, Comprehensive Staging Plan 1980, February 1, 1980.

Oak areas.⁶ The Growth Policy Report states that an increase to 10,000 units and 11,000 employees would be contingent on planned highway improvements to Sandy Spring Road and Randolph Road, east of Route 29, being at least 50 percent programmed for construction. Approximately 3,000 additional dwelling units (beyond the 10,000) could be achieved at a later time if the transit improvements recommended by this plan are programmed.⁷ Such improvements could include express bus service or bus transit service on exclusive or reserved lanes.

The Comprehensive Staging Plan recommends that a limitation during Stage One of 500 net new dwelling units and 500 net new employees be set in the Cloverly area until New Hampshire Avenue is programmed for widening to at least four lanes between Randolph Road and Briggs Chaney Road.⁸ After widening is programmed for construction, the Growth Policy Report identifies capacity which would permit an increase to 5,000 units, and no additional employment.

Given the forecasted pace of growth for the area, the road improvements recommended in this plan should be staged as follows. In the first phase, which should provide development capacity beyond the first six years to 1990, Route 29 should be widened to six lanes between New Hampshire Avenue and Briggs Chaney Road to provide capacity for additional development and to relieve current capacity problems, and New Hampshire Avenue should be widened to six lanes between East Randolph Road and the proposed Intercounty Connector if it is built. The following additional improvements should also be made during this phase:

- Bonifant Road, Layhill Road to New Hampshire Avenue: 2 lanes.
- Briggs Chaney Road, Route 29 to Intercounty Connector: 4 lanes.
- Briggs Chaney Road, remainder: eliminate "dog-legs" at New Hampshire Avenue and Old Columbia Pike, spot safety improvement elsewhere.
- Good Hope Road, New Hampshire Avenue to Blanton Road: 2 lanes.
- Lockwood Drive, reconstruct intersection at New Hampshire Avenue.
- Randolph Road, Route 29 to Prince George's County Line: 4 lanes.
- Randolph Road, reconstruct and resignalize intersection at New Hampshire Avenue.
- Sandy Spring Road, Route 29 to Prince George's County Line: 4 lanes divided.
- Fringe Parking Lots, construct White Oak lot, including access road, acquire land for Colesville, if needed, Fairland Road, and Burtonsville lots.

In the second phase, which could expand development capacity at current growth rates to 1995, Route 29 should be widened to six lanes from Briggs Chaney Road to Spencerville Road, and New Hampshire Avenue should be widened to four lanes between the Intercounty Connector and Spencerville Road. The Intercounty Connector, in whatever form it is ultimately approved, should be built in this phase. In addition, the following improvements should be made during phase two:

⁶ Comprehensive Staging Plan, Op. Cit., pp. 52-53, and for the Patuxent watershed, staff estimates.

⁷ Op. Cit., pp. 5-17 and 5-30.

⁸ Op. Cit., pp. 48-49.

⁹ Op. Cit., pp. 5-17 and 5-28.

- Fairland Road, Randolph Road to Route 29: 2 lanes.
- Lockwood Drive, Route 29 to New Hampshire Avenue: 4 lanes.
- Old Columbia Pike, Route 29 to Intercounty Connector: 2 lanes.
- Old Columbia Pike, Industrial Parkway to Stewart Lane: 2 lanes.
- Randolph Road, New Hampshire Avenue to Route 29: 4 lanes, divided.
- Fringe Parking Lots, construct Colesville, if needed, Fairland Road, and Burtonsville lots.

In the third phase, Route 29 should be widened to six lanes between Spencerville Road and the Howard County line. In this phase the decision on the Route 29 relocation and interchange at Burtonsville should be made. New Hampshire Avenue should be rebuilt as an improved two lane road north of Spencerville In addition, the following improvements should be made:

- Briggs Chaney Road, entire length (except portion rebuilt in phase one): 2 lanes.
- Fairland Road, Route 29 to Prince George's County Line: 2 lanes.
- Old Columbia Pike, Intercounty Connector to Spencerville Road: 2 lanes.
- Spencerville Road, through Burtonsville business district: 6 lanes.

SANDY SPRING/ASHTON SPECIAL STUDY AREA

Adopted November 1980

(Starting on Page 83)

Water and Sewer Service Recommendations

Proposed changes to the Montgomery County Comprehensive Water Supply and Sewerage Systems Plan are shown on the Proposed Water and Sewer Plan map.

The Plan:

1. Recommends providing public water and sewer service to portions of Sandy Spring and Ashton planned for commercial and medium-density residential uses.
2. Continues limited access sewer policies in the area between Ednor Road and Maryland Route 108.
3. Recommends the overall support of the following County rural sanitation policies for areas designated for low-density residential development:
 - Public water and sewer in rural areas should be discouraged except in cases where public health hazards have been clearly documented by the County.
 - Both sewer and water service should be provided simultaneously whenever possible.
4. Supports a small extension of public sewer and water to allow the clustering of homes away from historic structures along Meeting House Road. The overall density would be consistent with the Master Plan.
5. Endorses the County's Office of Environmental and Energy Planning (OEEP) efforts in developing a Rural Sanitation Plan which will provide a framework for the solution of rural sanitation problems. The OEEP has conducted a sanitary survey of Sandy Spring to document the existing health problems and cost-effective ways of dealing with the problems. Solutions could include new wells and/or septic systems, possible use of mound systems, an alternative system or some pumping facilities.

AGRICULTURAL PRESERVATION
Adopted October 1980
(Starting on Page 59)

WATER AND SEWERAGE GUIDELINES

Water and sewer service are two of the most significant public services that control the timing of development. The recommended guidelines are designed to permit little, if any, additional service within the Study Area with the exception of the growth areas--Damascus, Clarksburg, Olney, and Poolesville. The selective and limited expansion of public water and sewer service will support and help implement the preservation recommendations expressed in this Plan. Service to the Agricultural Preservation Study Area is shown on the Existing Public Resources Maps.

Recommended Water and Sewerage Guidelines

- Consistent with recommendations in the Fifth Annual Growth Policy Report, the entire Study Area (Policy Area I) is not recommended for public sewer service within the next 20 years, with the exception of Clarksburg.
- Deny public water and sewer service to areas designated for agricultural preservation that utilize the Rural Density Transfer Zone (RDT).
- Endorse existing policy to relieve public health problems beyond the sewer envelope by permitting publicly sponsored individual or community system installation under controlled conditions.
- Continue investigation of alternative publicly sponsored individual and community systems for application in areas experiencing community-wide or scattered public health problems beyond the sewer envelope.
- Deny private use of alternative individual and community systems in all areas designated for the Rural Density Transfer Zone (RDT).
- Study the possible application of private alternative individual and community systems in rural open space areas.
- Develop water and sewer policies for the Damascus area that complement its critical location within the Agricultural Reserve as part of the Damascus Master Plan update process.
- Study rural communities and villages for those should be considered for publically sponsored alternative individual and community systems to help increase the amount of low and moderate cost housing and solve related health problems.

- Support the water and sewer recommendations expressed in the Olney Master Plan and Poolesville Vicinity Master Plan.

(Page 67)

Recommended Water Resource Guidelines

- Provide solutions to water resource problems in the form of conservation, treatment, and animal waste management measures. In conjunction with the Little Seneca Lake project, a report entitled Seneca Creek Watershed was published by the Montgomery and USDA Soil Conservation Districts, the USDA Forest Service, and the Environmental Division of the MCPB in November, 1979. This is a valuable land management document and should be the prototype for future land management reports for other agricultural areas.
- Preserve and improve the water quality and quantity of streams in the Agricultural Preservation Study Area and reduce the harmful effects of flooding, erosion, and sedimentation by requiring that new development within the proposed growth areas of Clarksburg and Damascus be channeled and phased in accord with a comprehensive watershed management program.

OLNEY MASTER PLAN
Adopted June 1980
(Starting on Page 125)

IMPLEMENTATION

This chapter describes policies and programs which should be taken to implement the Olney Master Plan.

STAGING RECOMMENDATIONS¹

The Fifth Annual Growth Policy Report of the Montgomery County Planning Board proposes a County-wide staging policy. The staging program for Olney consists of two stages:

STAGE ONE is keyed to the present carrying capacity of Georgia Avenue. Until widened, this major access road to Olney can only absorb traffic from another 1,700 homes.

STAGE TWO will begin when Georgia Avenue is programmed for widening to 4 lanes from Norbeck Road to Maryland Route 108 (the project is in the final design stage). This improvement will accommodate all future growth projected for Olney (5,000 dwellings).

The Olney Master Plan supports these staging policies as follows:

The first stage of development in Greater Olney will be limited to the capacity of Georgia Avenue. Stage Two development will commence when improvements from Norbeck Road to Route 108 are placed in the State Highway program for construction.

All subdivisions in the Georgia Avenue corridor south of Brookeville will be counted toward the capacity of Georgia Avenue. However, development in the rural area north of Brookeville will not be affected by the limited capacity of Georgia Avenue because densities are too low and the traffic distribution pattern too scattered to significantly affect highway traffic volumes.

Once the widening of Georgia Avenue is funded by the State Highway Administration's Five Year Construction Program, additional growth can occur since the Planning Board, in administering the Adequate Public Facilities Ordinance, must recognize the capacity of projects slated for construction within a six-year period.

This Plan supports the recommendations of the Fifth Annual Growth Policy Report that the APF ordinance be amended to require that a project be at least 50 percent funded in order to be considered an adequate facility. This requirement would allow better coordination of private growth and public facilities.

¹ These recommendations are consistent with the Planning Board's 5th Annual Growth Policy Report.

Two major public facility systems--Sewerage and Transportation--will determine the staging of development in the northeast quadrant of the Town Center.

To facilitate development in the Town Center, it will be necessary to amend the Comprehensive Water Supply and Sewerage Systems Plan map. A portion of the northeast quadrant is presently in Category S-5 which means services are not planned for 7 to 10 years. The Olney Master Plan recommends that sewer services be provided as soon as market demand exists for proper development and utilization.

Over the entire development, the timing of major transportation system improvements is crucial. Georgia Avenue must be widened and Prince Philip Drive completed to Georgia Avenue before development of the Town Center can be fully realized. The final segment of Prince Philip Drive will be a costly road partly because of a ravine which must be spanned near Georgia Avenue. To assure timely completion of the road, which is needed to service TDR receiving zones as well as the Town Center, County participation in the construction process may be necessary.

As the Town Center and receiving zones near completion, the level of service along Route 108 and between Dr. Bird Road and Bowie Mill Road may decline. Traffic levels along Route 108 will be monitored and the necessary right-of-ways for the road will be dedicated at time of subdivision to help assure timely completion of improvements when and if they are needed.

A summary of the Plan's staging recommendations is contained in Table 15.

TABLE 15

OLNEY MASTER PLAN
STAGING RECOMMENDATIONS

STAGE ONE		STAGE TWO
Proposed Growth	1,700 homes	3,300 homes
Key Land Use Use Policies	<ul style="list-style-type: none"> - Encourage residential infill in existing sewer envelope. - Begin construction of Town Center. - Implement TDR Program. 	<ul style="list-style-type: none"> - Continue implementation of TDR Program and Town Center concept.
Key Community Facilities	<ul style="list-style-type: none"> - Completion of Georgia Avenue/Route 108 intersection. - Completion of Georgia Avenue/Norbeck Road intersection. - Completion of Briars and Queen Elizabeth Roads. - Construction of Olney library. - Expansion of Longwood Recreation Center. - Construction of priority bikeway paths. 	<ul style="list-style-type: none"> - Georgia Avenue widened from Norbeck to Town Center. - Additional sewage pumping capacity in N.E. quadrant of Town Center. - Opening of Glenmont Metro line.

GEORGIA AVENUE WIDENING FUNDED

STAGING PROGRAM

The implementation and staging recommendations contained in the Plan are based on the following factors:

1. The major roads which serve the Subregion have limited transportation capacity at present.
2. Sewage treatment capacity to serve the Subregion is a primary limiting factor within the master plan period (0-10 years).
3. The only realistically available staging mechanisms are the provision of sewer service and the improvement of street capacity.
4. It is County policy to provide "moderately priced dwelling units" (MPDU's) in the Subregion, as well as in all other areas of the County which are zoned for half acre or more dense zoning. However, MPDU's are not required in areas which are not within the ten year water and sewer envelope.
5. Much of the area currently zoned RE-2 can be developed on septic and well systems at densities comparable to or only slightly reduced from the two acre zoning standard.

Based on the above, the Plan recommends that the highest priority for development be granted in those areas recommended for R-200 zoning. If the R-200 areas are inhibited from development because of a lack of sewer allocations, the areawide general transportation capacity that is currently available will eventually be used up by other development which would occur in the RE-2 (Residential Estate - 2 acre) zoned areas. Eventually, the following adverse conditions would result:

1. Few, if any, MPDU's will be constructed in the Subregion until sewer capacity becomes generally available and additional transportation capacity is provided. Since the deficiency of transportation capacity occurs primarily on State highways, such as River Road and Route 28, the implementation of County housing policy in the Potomac Subregion depends indirectly on the State's ability to finance new highway construction.
2. The number of vehicle miles of travel for all trip making purposes increases.
3. Continued dispersion of potential elementary and secondary students will increase the length of school bus trips.
4. Development of the two acre areas on septic systems can result in development patterns which are not ecologically sound or environmentally sensitive in terms of preserving unique natural features and open space.

By encouraging early development of the R-200 areas by making sewage treatment capacity available, the new growth will be better matched to the available transportation capacity. Later occurring, low-density sprawl-type development could then be retarded through the use of the adequate public facilities ordinance if improvements to road capacity are not made. Under the County's Adequate Public Facility Ordinance, when the available transportation capacity has been exhausted, additional subdivisions which can be shown to overtax the highway network, whether on sewer or septic, cannot be approved until additional highway capacity becomes available. First priority for sewer service (Category 1-3) should be given to areas within the R-200 zoning category.

The approximately 5,280 acres of undeveloped land in the R-200 classification could produce a maximum of 12,672 new dwelling units if allowed to develop and the density bonus for MPDU's is applied.

The second and third priority areas to receive sewer service, respectively, should be the Rock Run Drainage Basin and those two-acre areas between River Road and the Potomac River. The Plan recommends that these areas be placed in sewer and water service category five. This places these areas within the sewer envelope but at the end of the 7 to 10 year period.

The final stage for the expansion of the sewer envelope would be those two-acre areas which can logically and economically be served by extensions from, or which can tie in with the transmission system as extended during the previous stages. Since there are no programmed dates for the provision of additional treatment capacity, it is impossible at this time to recommend dates for the beginning of each stage. With the exception of the Stage I recommendations, which would begin immediately, the other two stages must be tied to the provision of sewage treatment capacity and highway capacity. Depending upon how additional capacity is provided some refinements of the staging elements may be desirable in future years, but within the general policies recommended above.

The Plan does not contemplate extension of sewer and/or water to all of the areas recommended for two acre (RE-2) zoning, particularly those two acre areas immediately adjacent to the Rural Zone areas. If the transmission system extensions to serve a given area cannot be constructed economically, then that area should be allowed to develop on well and septic systems.

BETHESDA CBD SECTOR PLAN

Adopted June 1976

Amended January 1980

(Starting Page 139)

STAGE I

Stage I starts with the Sector Plan adoption (June 1976). The CBD-3 area as shown on Figure 27, "Staging Plan," is recommended for early approval under the optional method of development. One million square feet of net new development above the amount approved as of January 1, 1980, is allowed in the CBD-3 area, and may be occupied as soon as it is constructed. It is expected that most of this development should be integrated with Metro's facilities. This does not represent an increase in total density within the CBD-3 area recommended elsewhere in this Plan. During this stage, METRO should be opened for service to Bethesda; and most of the public facilities recommended in this Plan should be in place or under construction. (Area for Stage I modified to CBD-3 zoned area).

STAGE II

Stage II starts whenever Metro is in operation.

STAGE III

Stage III starts after 2.5 million square feet of net new development are committed. This stage applies to the area identified as the Montgomery Triangle. Staging shall apply only to the areas designated in the Montgomery Triangle for the O-M Zone, applications for which should not be considered until the development commitment occurs. The staging limitations shall not apply against applications for C-T Zones, so designated in this area on the Sector Plan.

GERMANTOWN

Adopted January 1974
Amended September 1979
(Starting on Page 67)

STAGE ONE

This development stage can be rather precisely delineated. It pertains to existing dwellings and/or other structures which are expected to remain and to those areas which have outstanding authorizations for sewer. Those areas have a potential for 5,700 units (see Exhibit 20).

STAGE TWO

This stage will commence, regardless of the state of development in Stage One, when additional sewer treatment capacity becomes available.

The sewer service program, therefore, should be extended as recommended in this Amendment (see Section 4.53 and Exhibit 24). This will require amendment of the Comprehensive 10-Year Water and Sewerage Plan to permit a more detailed program of service extension to areas smaller than an entire drainage basin. Limited-access sewers will also be required in some areas to avoid opening more land to development than called for in the periodically revised development program for Germantown.

Based on expected rates of development this Master Plan Amendment recommends that the second stage of private development should permit a maximum of 11,500 additional dwelling units. This figure may be revised, based on development experience, market forecasts, and capital improvements scheduled by the time development begins in this stage. Assuming that Stages One and Two, together, will extend for about the first ten years of development, this will allow "room" for more than twice as much population as is predicted for Germantown in this period. This wide margin is recommended to allow for competition and in recognition that, for a variety of reasons, not all owners will be ready or able to develop within that time frame. Development in this stage can commence only when major additions to sewer treatment capacity are made. This area should be included in the comprehensive sectional map amendment enacted immediately following the adoption of this Comprehensive Amendment to the Master Plan for Germantown, however, to allow preliminary development approvals, such as applications for rezoning to the Planned Development Zone and for preliminary subdivision approval, to proceed.

The Stage Two development envelope should be extended to allow development to continue apace, primarily in the Churchill, Gunners Lake, and Middlebrook Villages. This land, as delineated on Exhibit 20, is currently held in 46 separate ownerships. All the areas in Stage Two are close to I-70-S and other existing improvements; are in proximity to the town center; and, importantly, are all located upstream from proposed storm-water management facilities indicated in the Seneca Creek Watershed Study or from facilities to be provided by the County or the developers, in accordance with the standards developed through the ongoing Countywide storm-water study. Also, these areas do not require major sewer trunk line extensions in excess of any required for the Montgomery College campus.

Programming for public facilities, therefore, should initially be concentrated in these three villages and in the sequence described in this Amendment. These facilities include the Germantown campus of Montgomery College, proposed for Middlebrook Village. Each neighborhood developed should be served by an elementary school.

Every effort should be made to program public facilities at the earliest possible time. Sewer and transportation facilities should also be provided concurrently. This relates particularly to a quadrant formed by Maryland Route 355, the Eastern Arterial, Middlebrook Road extended, and M-61. This quadrant should be placed in Stage Two. It is the intention of the Master Plan that the timing of this quadrant be governed by the availability of adequate service from the Eastern Arterial and Maryland Route 355. Consequently, the point in time that this area should be scheduled for sewer service in the Comprehensive Ten-Year Water and Sewerage Plan should be adjusted so that development will be possible at the time transportation and sewer services are concurrently available. Thus, when the time for the construction of the Eastern Arterial has been determined or capacity is found to exist on Maryland Route 355, the Comprehensive Ten-Year Water and Sewerage Plan should be adjusted to provide sewer service at that time. Exhibit 24, a Proposed Amendment to the Ten-Year Sewerage Plan, depicts this area in the three-to-six-year period for sewer service, Category 11-B.

Similarly, the Staging Plan for the Germantown area must recognize the existence of an already approved subdivision in the Kingsview Village. This area, therefore, should also be designated for development in Stage Two; and the development should be contingent upon the application of adequate storm-water measures.

During Stage Two, construction for the village centers for Churchill and Middlebrook should be commenced and, possibly, the village center for Gunners Lake as well. Additional land may be developed to support the construction activities in Germantown. Some initial development in the central business district could also be included in Stage Two, but only on the basis of a comprehensive development plan, indicating the full extent and schedule of development. Rezoning for the central business district should be effected in a manner that will assure the integrity of this core area and will avoid the development of premature, non-center uses that should appropriately be located in village centers or other sectors of less intense development (see Section 3.62). Highway-related commercial activities in the town center should commence in conformance with the guidelines set forth in Section 3.61. Industrial development in Germantown should be expected to expand during this stage to accommodate about 10,000 employees. If this volume of employment occurs, the staggering of work hours may be necessary to ease peak-hour traffic at Maryland Route 118 and I-70-S.

The volume of private construction in this stage will require that the programming of roads keep pace with development. The second stage is predicated upon the construction of relocated Maryland Route 118 as a four-lane facility from Maryland Route 355 to Clopper Road, the widening of Maryland Route 355 to four lanes from Montgomery Village Avenue to relocated Maryland Route 118, the widening of Clopper Road to four lanes from relocated Maryland Route 118 south to Maryland Route 124, the widening of Middlebrook Road to four lanes from Maryland Route 355 to Maryland Route 118, the extension of Middlebrook Road from Maryland Route 355 to the Eastern Arterial, and the construction of the Eastern Arterial as a six-lane facility from Montgomery Village Avenue to Middlebrook Road extended. These projects should be placed in the Capital Improvements Program and/or the Maryland State Department of Transportation five-year construction program for development concurrently with the commencement of the second stage of private development.

"The Fifth Annual Growth Policy Report has identified that there are 5500 dwelling units with sewer allocations in the portion of Germantown west of I-270 and a remaining capacity in the road network for only 3000 more dwelling units. Thus no additional lots should be recorded in that area until the capacity of the highway network has been expanded. The County Council has accelerated the programming of the Western Arterial

(M-90) called the Great Seneca Highway. This is a necessary improvement; however by itself, it is not sufficient. That portion of Maryland Route 118 between Middlebrook Road and Aircraft Drive must also be improved.

"To facilitate the timely construction of this portion of Maryland Route 118 the Montgomery County Council may establish a Public Improvement District in that portion of Germantown west of I-270. The Public Improvement District will be responsible for the construction of that portion of Maryland Route 118. The financing for the construction would come from fees collected at the time of building permit approval. The fees would be on a per-unit basis for residential development and on a per square foot basis for retail and office development.

"If the County Council does not establish a Public Improvement District and if the highway improvements are not programmed by the State by the time private development wishes to move ahead then an alternative approach is proposed. In such a situation, all subdivision in that part of Germantown which apply for recordation subsequent to the approval and adoption of this amendment must first enter into a public works agreement for the widening to four lanes of that portion of Maryland Route 118 from Middlebrook Road to Aircraft Drive and the improvement of those two intersections. This requirement shall be a condition of the approval of any preliminary plan or the extension of the approval of any preliminary plan made subsequent to the approval and adoption of this amendment.

"Upon recording, the owner and all successors and assigns will be bound, by public improvement agreement, to construct the improvements. The agreement shall be in accordance with the requirements of the State, County and/or Municipal agency, whichever is applicable and the agreement shall be recorded in the land records of Montgomery County. This agreement shall not constitute the programming of the road improvement. Therefore, any subdivision in the portion of Germantown west of I-270 is subject to the requirement of entering into such an agreement prior to recordation even if another developer has previously signed a similar agreement. The requirement to enter into such an agreement shall continue until the roadway improvements are completed by private funds or until 50% (fifty percent) of the construction funds for the improvements are contained in the 5-year State Secondary Highway Improvement Program or in the 6-year County Capital Improvements Program."

STAGE THREE

The third stage of Germantown development depends upon detailed study and decisions and will open the remaining sections of the first three villages to development. It will also open the sections of Clopper Village which can be properly served by public facilities.

The areas to be opened within Stage Three will be dependent upon specific major transportation facilities being programmed for construction and the programmed extension of sewer service areas. While zoning for Stage Three may occur fairly early, under the Adequate Public Facilities Ordinance, subdivision development cannot commence until major additions to provide traffic accessibility and sewer service have been programmed. Thus, subdivision approval cannot be granted for those areas in Stage Three until the improvements necessary for their support have been programmed. The timing for the programming if the necessary facilities should be reviewed as the time approaches to commence Stage Three and annually thereafter, in regard to the pace of development during Stages One and Two.

There are three major transportation facilities which relate to this phase: (1) the Eastern Arterial, (2) the Western Arterial, and (3) the additional interchanges on I-70-S (see Section 3.2). The areas encompassed in the sectional map amendment process recommended for Stage Three should relate to the transportation facility to be provided.

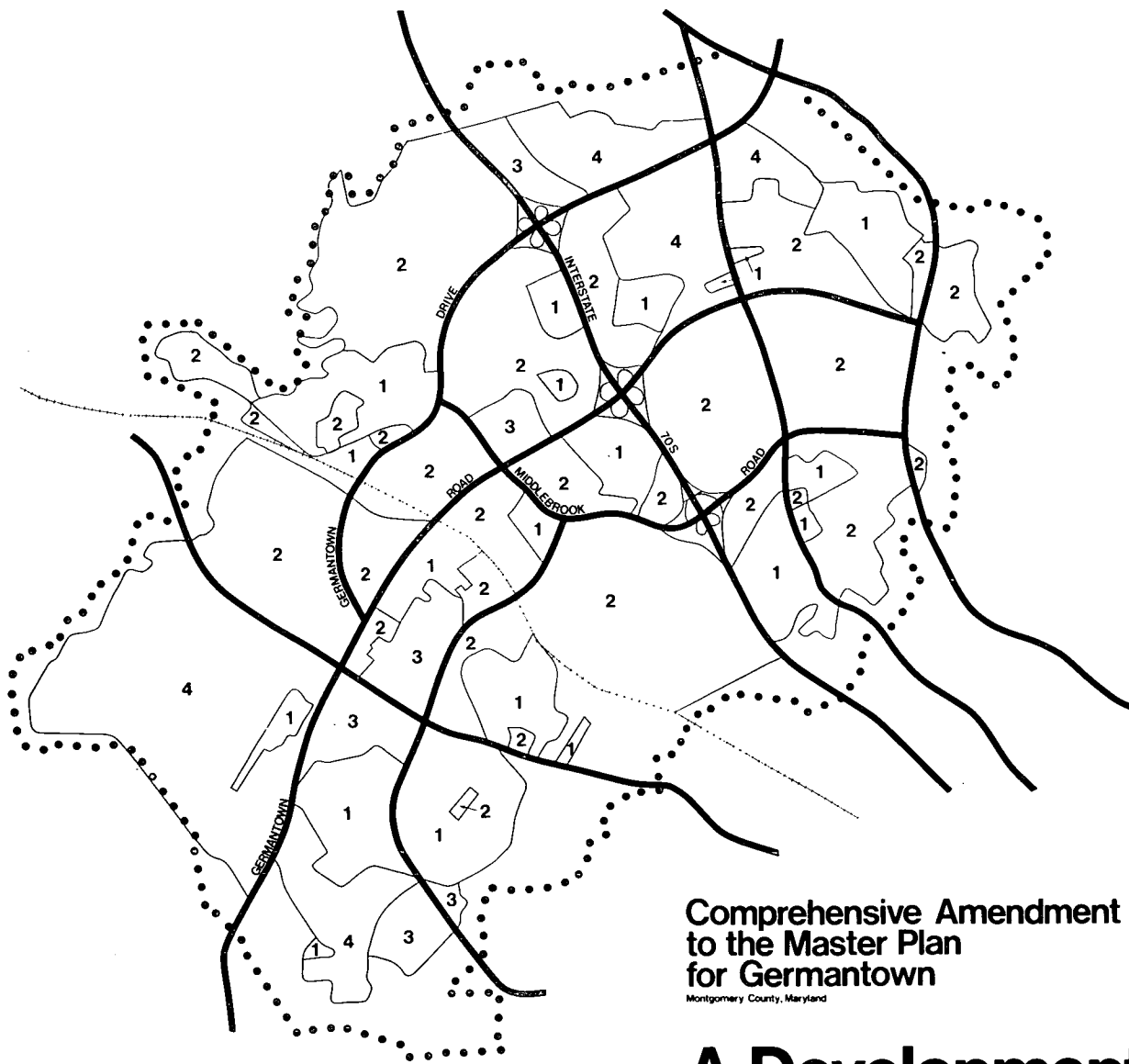
The aggregate potential number of new units in Stage Three is 4,700. The land in Stage Three is currently held in 42 separate ownerships.

Major development in the central business district, as well as the development of village centers in Gunners Lake Village if not already under way and in Clopper Village, is expected to take place during Stage Three. This stage can also be expected to produce major highway-oriented uses in the areas designated for them in the Land Use Plan.

Subject only to sewer service and storm-water management constraints, all remaining land indicated for industrial development on the Land Use Plan should be included in the sectional map amendment for Stage Three; and development should be authorized.

SUBSEQUENT STAGES

The subsequent stages of development depend primarily upon major sewer service extensions, in terms of trunk lines and pumping stations. They are also dependent upon the provision of additional storm-water management facilities. Comprehensive rezoning in the form of sectional map amendments will be undertaken, as necessary in response to the construction of such facilities. During these final "build-out" stages, 10,000 additional dwelling units will be developed, as well as the two additional village centers and completion of the town center and central business district.



Comprehensive Amendment to the Master Plan for Germantown

Montgomery County, Maryland

A Development Sequence Plan

• • • • • Planning Area
— Major Proposed Roads

- 1 Stage One
- 2 Stage Two
- 3 Stage Three
- 4 Stage Four

SEWERS

The existing sewer situation in Boyds is less than adequate and presents some special problems which must be solved if the town is to continue as a viable community. Although the majority of homes have working septic systems, there are several which totally lack indoor wastewater facilities. There have also been a number of instances when existing systems have failed.

A standard sewer system using large diameter pipe and a gravity flow process involves a substantial cost to provide a wastewater treatment system to a community, especially in a rural area where the houses are not immediately adjacent to one another. This high installation cost usually renders central collection systems in rural areas infeasible.

However, the use of a pressure system which utilizes small diameter plastic pipe provides an excellent alternative solution. Installation of this system involves connecting the existing house wastewater line to a Sewage Grinder Pump (SGP) unit which shreds waste and pumps it through small diameter plastic pipes which replaces a conventional sanitary sewer line. The existing septic tank remains connected and is used as an emergency overflow tank. Using this approach, the staff of the Montgomery County Office of Community Development has developed a possible cost-effective approach to this type of sewer system.

Basic components of the system are the pump-storage-grinder unit consisting of a master pump, grinder, check and relief valves and control tap; a concrete storage tank; plastic effluent pipe; and a failure alarm. The system requires 20 amp, 110 volt electrical service with the piping and pump storage grinder installed below the frost line to prevent freezing.

The collection system consists entirely of small diameter pressure lines which range in diameter from 1½ to 3 inches, combined with storage-grinder-pumps which can be designed to serve single, dual or multiple dwelling units. By locating the storage-grinder unit so that it serves more than one home, the cost per dwelling unit can be reduced.

Treatment is handled by a batch aerobic treatment unit. This treatment unit consists of a single container in which aeration, sedimentation and decanting of treated effluent are accomplished. The operation cycle would include more than 20 hours of aeration, 3 hours of sedimentation and 30 minutes decanting of the effluent, all of which is automatically controlled. The small amount of sludge which accumulates in the tank can be removed by pumping and hauling as necessary to designated WSSC septic tank pumpage acceptance sites. Sludge removal would be necessary perhaps twice annually.

The size of treatment facilities is based upon information regarding waste flows in rural areas. It has been well documented that rural water usage in homes with water consumptive fixtures and appliances is slightly more than 40 gallons/ person/day. Because Boyds will have the advantage of water from the extension of the WSSC system, it has been assumed that water usage may be slightly higher than if it were supplied by wells. For this reason, calculations to determine the feasibility of this system for Boyds used a figure of 50 gal/day/person.

The basic components of the recommended wastewater disposal system are relatively simple. These components would include secondary treatment through the batch-aerobic process followed by land irrigation. Secondary pre-treatment is necessary to comply with Maryland criteria prior to disposal on land. Use of aerobic secondary processes, is also necessary to enable nitrification to occur in the partially treated wastes. This is beneficial prior to land irrigation to prepare the waste for nitrogen removal by denitrification which occurs in the soil.

The secondary treatment units necessary for this alternative are readily available manufactured units which require no special fabrication or components. The secondary treatment unit can be placed in the ground and the entire system blended into the natural environmental setting.

Overall, this system represents a feasible and innovative approach to rural communities having problematic soil conditions and a small volume domestic wastewater flow.

This system is competitive with and less costly than a WSSC extension while accomplishing the objectives that are of vital importance to the future of this and other rural communities. Important aspects of this system which are critical to both the system and the plan are:

- . Providing a disposal system that has a limited capacity for future growth, thus protecting the character of the community by maintaining its low density and following the goals established by the Rural Zone and the General Plan for rural areas.
- . The establishment of a sewerage system will provide the town with the growth potential necessary to sustain the needs of its growing population and provide support for its existing and proposed community facilities.

STAGING

In order to address the most severe sewage needs in Boyds first and to ensure that the implementation of the recommended system is not undertaken without sufficient community support, the proposed service area is divided into two stages. Since the problems are generally more severe south of Route 117, it is anticipated that this section will be constructed first with the northern portion of the planning area to be served at a later date. The full-size treatment facility and disposal site will be developed along with the stage 1 collection system. Thus when stage 2 is ready for inclusion in the sewerage system, all that will be required is the installation of the collection system and the connection to the 3" pressure sewerline at the northern point of White Grounds Road.

Implementation of this recommendation shall proceed only after 60 percent of the existing users within either stage 1 or stage 2 demonstrate their willingness to connect to this system by filing a petition with the Montgomery County Office of Environmental Planning and/or the County determines that a public system is required to safeguard the public's health.

In the event that no petition is filed prior to the adoption of the FY-1981 Ten-Year Water Supply and Sewerage Systems Plan, the Planning Board will reconsider all master plan elements which are contingent on the construction of the public water and sewer system.

NORTH BETHESDA SECTOR PLAN-GROSVENOR

Adopted May 1978

(Starting on Page 76)

STAGING

As discussed under Land Use Plan, two alternative land use plans are proposed, particularly affecting the areas adjacent to the METRO station. The alternatives are based upon the potential air-rights development over the METRO facilities. The staging of development at the station should also be based on retaining the option for air-rights development for at least several-years. If air rights are acquired on parcel 2, then Land Use Plan "A" will remain effective. If, however, air rights have not been conveyed within two years of the Grosvenor METRO station's becoming operational, then Land Use Plan "B" would be deemed effective. The Planning Board may, however, extend this time by an additional twelve months provided evidence is submitted that negotiations regarding air rights are about to be concluded.

The staging of development should be reflected in any rezoning application. The recommended Transit Station-Residential (TS-R) Zone requires a staging plan to be submitted with a rezoning application. It is recommended that the increment of development that would be permitted on parcels 3 and 4, if Land Use Plan "B" became operational, be indicated on the rezoning application as the final stage of development. That final stage of development would be authorized only upon a finding by the Planning Board that Alternative "B" is the operative plan. In this way, both the county and the applicant would not have to go through the rezoning process again if Land Use Plan "B" were operational, and yet the ultimate development scale of the parcels would be limited by disallowing the final stage if air-rights development becomes a reality.

Careful consideration should also be given at time of zoning to staging the development of properties to ensure that development is coincident with the provision of METRO and new proposed streets. This will ensure that new development can take full advantage of its proximity to METRO. Protection from over development can also be provided through the development review process at time of application for rezoning to either the Planned Development or Transit Station zones, wherein a finding of adequacy of public facilities must be made as a prerequisite for rezoning. This provision ensures that public facilities exist of sufficient capacity to accommodate the development proposed in the rezoning. Or it may provide for the staging of development to coincide with the provision of those public facilities.

NORTH BETHESDA SECTOR PLAN-NICHOLSON LANE

Adopted May 1978

(Starting Page 127)

STAGING

As previously discussed, two alternative land use plans are proposed for the transit station core, based upon the potential of air-rights development over the eastern METRO facilities. The staging of these two alternatives should be based on the operation of the Nicholson Lane METRO station. If air rights are acquired on the parcel designated as METRO East, then Development Alternative "A" is effective; if, however, air rights are not acquired within two years of the Nicholson Lane METRO station's becoming operational, then Development Alternative "B" would be deemed effective. The Planning Board may, however, extend this time by an additional twelve months, provided evidence is submitted that negotiations regarding air rights are about to be concluded.

This can be reflected in any rezoning application to the recommended TS-M Zone through a staging plan which is a required part of the rezoning submission. It is recommended that the increment of development, which would be permitted on the adjacent parcels if Development Alternative "B" becomes operative, be listed on the staging plan as the final stage of development. Of course, this would also require other qualifiers to be added to the rezoning, especially the implementation of Development Alternative "B". Thus, neither the applicant nor the county would have to go through the expense or time involved with the rezoning process again, the development can be controlled whether or not air rights are acquired.

Careful consideration should be given at time of zoning to staging the development of properties in the transit station zones to ensure that development is coincident with the provision of METRO and new proposed streets. This will ensure that new development does not overburden the public facilities in the area, and the new development can take full advantage of their proximity to METRO. Protection from over development can also be provided through the development review process at the time of application for rezoning, wherein a finding of adequacy of public facilities must be made as a requisite for rezoning. This provision ensures that public facilities of sufficient capacity will be available to accommodate the development proposed. It may also provide for the staging of development to coincide with the provision of those public facilities.

SHADY GROVE SECTOR PLAN

Adopted April 1977

(Starting on Page 134)

10.2 IMPLEMENTATION PROCEDURES AND STAGING

Staging of development in Shady Grove should take place during three time periods: short range (next 2-3 years), middle range (3-8 years), and long range (beyond 8 years). In the short range time frame the staging of public facilities is tied to the opening of the Metro station. Capital improvements are required to provide access and sewerage service to Metro. In the middle range time frame, private development is tied to the construction of Crabb's Branch sewer and the provision of sewerage for this subwatershed.

Although sewerage service will be provided during the middle range time frame the entire sector plan area should not be developed during this period. The King farm, the large expanse of property proposed for Industrial Park (I-3) zoning (planning analysis area 28, see Figure 28), should not develop until sufficient transportation facilities are in place. Thus, during the short and middle range time frames the King farm is proposed to be kept in the present R-200, residential zone. When the transportation facilities outlined below are in place, rezoning to I-3 would be appropriate if all other appropriate planning criteria are met.

The staging mechanisms available to the County, i.e., the Capital Improvement Program, sewer service categories, and sectional map amendment, should be modified to implement the staging recommendations of this Plan.

SILVER SPRING EAST
Adopted March 1977
(Starting on Page 76)

Water Quality/Sewerage System

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While water quality of the Anacostia River tributaries is generally considered good, above-average, mean bacteriological densities and evidence of fecal coliform pollution have been registered in all three streams at various times. The condition of some parts of the gravity sewer systems, which are old and have experienced leakage, are believed to have polluted the area's natural waterways. Periodic surcharging (overflow) occurs due to leakage of storm water into the sewer system during heavy storms. The completion of scheduled relief sewer projects should improve overall water quality. The projects at Long Branch and Northwest Branch are nearly complete and the Sligo Relief and Silver Spring Avenue Replacement Sewer projects will be constructed during 1977 and 1978.

In an attempt to continue to upgrade water quality, the following actions are recommended:

- Sources of stream pollution within the area and corrective action to improve water quality should be accurately determined by the DEP and WSSC; and
- Reports of the water quality of stream valleys should be published periodically.

To improve the conditions relating to sewerage systems, the following actions are recommended:

- Planning and construction of sewers should be sufficiently long range and coordinated with appropriate agencies, so as to minimize disruption to parkland and adjacent private uses; and
- The M-NCPPC and WSSC should continue to notify all adjoining and interested citizen's associations of sewer replacement or expansion, or any other utility work that may have a community impact.

SILVER SPRING SECTOR PLAN

Adopted July 1975

(Starting on Page 105)

STAGING

In order to maximize the METRO Orientation and focus of the Central Business District, this Plan proposes that, to the extent possible, new development be encouraged to center first upon the METRO station--particularly and relatively undeveloped parcels east of the B & O R.R. tracks. This suggests that impetus be given to undertake new development on parcels close to the METRO facilities on Second and Wayne Avenues, and on Bonifant Street. Similarly, early development in the area between Cameron Street and Colesville Road should also be encouraged. In addition to parcels on the east side, the Loving tract could be permitted to develop during this first or interim stage.

Accordingly, this plan proposes that any interim sewer capacity available for Silver Spring recognize that these areas should receive first priority for service.

Secondarily, in response to proposed public investment in a first pedestrian way link between the METRO station and the east side of Georgia Avenue, development of the Civic Center area should be undertaken.

New construction in other areas is not meant to be precluded by this orientation; however, proposed development projects in other parts of the Sector Plan area should be looked at carefully in terms of their relation to both public improvements and to the development of the central core, which must have first priority to give Silver Spring an attractive and viable future.

After construction of the Advanced Wastewater Treatment Plant, making sewer service generally available throughout the County, a second stage for development in Silver Spring will begin.

The Falkland tracts, due to their size and the importance of an integrated development plan and schedule for them, should not develop until this second stage is reached, but, in any event, not before 1980.

TAKOMA PARK SECTOR PLAN
Adopted 1974
(Starting Page 58)

Stage II - 1979-1984

End of Sewer Moratorium

- Lifting of the sewer moratorium in the Anacostia Drainage Basin should allow new development to occur in Montgomery County.

Potential Development

- Mixed-use development should occur in the Carroll Avenue-Laurel Avenue shopping area, including provision of such desirable features as a variety of retail uses on street frontage, an open space relationship to the urban park at Westmoreland Avenue, and a pedestrian corridor past the Seventh Day Adventist Church to the Metro Station.
- Development may occur in the portion of the District of Columbia along Carroll Avenue and adjacent to Cedar Street.

Adequacy of Buffers

- Buffers between residential areas and the Metro station site or business areas should be evaluated; and improvements should be made, if necessary.

Neighborhood Maintenance

- Progress of neighborhood maintenance in the low-density residential area south and west of Tulip Avenue and in the other residential areas within the Metro station impact area should be assessed.

Stage III - 1984-1994

Potential Development

- Given that the necessary land assemblage occurs, and that such development is still compatible to the area, the redevelopment indicated as suitable for townhouses may possibly take place.
- Remaining land in the shopping area should now develop, preferably in a mixture of uses (under TS-M zoning)--particularly the land on the north side of Carroll Avenue in the Montgomery County portion of the Takoma Park business district.

GAITHERSBURG & VICINITY
Adopted January 1971
(Starting on Page 41)

IMPLEMENTATION

STAGING

New residential growth in the Gaithersburg vicinity has been triggered by the establishment of several large employment centers along Interstate I-70S during the last decade. Other recent growth is due to the improvement of commuter trips to employment centers in the down-County and other areas in the metropolitan region since the completion of I-70S.

Some of this growth has occurred contiguous to the older development in the center of the City. Until sewers were installed in recent years in the Seneca Creek Basin, most development was confined to the Rock Creek Basin, plus the several small areas served by pumping stations to the west and south of the old town. With sewers now installed in Whetstone Branch, Great Seneca Creek, and a portion of Long Draught Branch, other development can now locate some distance away, in what are still rural surroundings. Therefore, it is no longer reasonable to expect development to expand outward in concentric rings from the old town center; rather, the response of development will be to the addition of new employment centers, the construction of additional highways, and the relative pricing of new housing, as compared with the cost and convenience of commuting to job locations elsewhere.

Public policies and actions have been highly favorable toward the encouragement of development in the corridor cities. Because of the open character of the area, it is possible to acquire highway and utility rights-of-way and sites for public facilities, with relative ease and minimum costs as compared with the more developed sections of the County. The County's program for the Medical Center calls for increased amounts of private housing in that area. The decision to forego any expansion of the Airport assures nearby areas that heavy or jet aircraft will no longer be a threat to the environment in that vicinity and that additional amounts of low-density development will be possible. Clearly, the interest of balanced growth calls for continued public policy favoring continued development in this corridor city.

It is the general policy of the County to rezone for higher intensities only when adequate transportation and other public facilities are completed or are firmly scheduled for adequacy status by the time the proposed development on new zoning will occur. Particular care should be exercised to assure that the timing of high-density development in the area surrounding the proposed interchange of the Outer Beltway with I-70S is coordinated with the timing of construction of the Outer Beltway.

ROCK CREEK MASTER PLAN
Adopted October 1968
(Starting on Page 45)

Sanitary Sewers--Sanitary sewers, eventually, will be needed to serve the planning area. This will be absolutely necessary in all density-controlled development if the "cluster" regulations continue to require access to sanitary sewers as a prerequisite for this type of development.

A reasonable modification to the present controls would be to allow utilization of individual septic systems in cluster development as now permitted in connection with conventional subdivision design, as set forth in Section 104-16(c) of the existing Subdivision Ordinance. This would permit, in varying degree, some reduction in total lot size in the Agricultural Residential and Residential Estate Zones, while maintaining the overall density required.

This flexibility in the regulations would be particularly helpful to the developer building a small number of homes. It also would permit development to proceed under a modified form of density control prior to the advent of sewers.

Flexible regulations in respect to the use of septic tanks would not be applicable to cluster development in the Rural Residential Zone. Here, access to sanitary sewers would be required, because lot sizes may be reduced to 10,000 square feet in a cluster plan, and this size lot is not acceptable for septic tank use.

Public schools required to serve the community also will need sanitary sewers. Thus, it will be necessary to provide sanitary sewerage to serve the planning area. It is recommended that these be designated as controlled-access sewers in order to assure that development occurs in conformance with the plan.

CLARKSBURG MASTER PLAN
Adopted September 1968
(Starting on Page 16)

INFLUENCES ON FUTURE GROWTH

...

Another problem is the absence of public services, due to the small current population. The use of wells and septic tanks is becoming increasingly unsatisfactory as population density increases, because the area's rocky geologic structure and impermeable soil encourage the mixture of septic tank effluent with well water and could, eventually, create a major health problem. Lack of sewers acts as a deterrent to economic growth and restricts choice in site selection for development. Public services are needed to improve rural roads, and Interstate 70-S is already overcrowded in peak hours as far north as Germantown. Secondary schools, playfields, a library, a health center, and police and fire facilities are absent.

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(Page 22)

IMPLEMENTATION OF THE PLAN

Putting the Plan for Clarksburg into effect will involve a number of different public programs. The most important of these will be the administration of the Zoning Ordinance and Subdivision Regulations and the construction of roads, sewerage and water supply systems, and other public works.

Staging

The Zoning Ordinance will be a principal control over private land development in the Planning Area. A process of rezoning must inevitably take place in Clarksburg, as it must in all areas undergoing rural-urban change. A method or system for orderly zoning change must be evolved. This could consist of an explicit series of criteria for rezoning to any of the districts in the Zoning Ordinance. These criteria would be concerned with such factors as the capacities of existing and programmed sewerage, water supply, and road systems, schools, and other public services, in consideration of soil conditions and capabilities and compatibility of the proposed development with its surroundings. These criteria should be developed on the basis of experience with traffic-generating characteristics of development in zoning districts, with projected water use and sewage discharge by different types of development, with soil conservation practices, and with other relevant factors. They should be explicit in order to guide the Planning Board and the County Council in rezoning decisions and to provide prospective developers with a correspondingly explicit statement of the County's policy on land development. Although much of the knowledge needed for deriving such criteria now exists, it has not yet been organized in usable form; this should be a continuing subject of research by the Commission staff.

DAMASCUS MASTER PLAN
Adopted June 1966

RESIDENTIAL DEVELOPMENT

The recommended density of development has been based in part upon the feasibility of providing public sewer. At present the entire area is dependent upon individual home disposal systems. The extension of water service to the Damascus area by the Washington Suburban Sanitary Commission in the near future will temporarily postpone the sanitary sewage problem. However, because of the soil conditions, a central sewage system must be provided before development can occur on a large scale, or at increased densities. Development of relatively high density, comprised of low density apartments, town houses and single family detached housing, is recommended for the Magruder Branch subwatershed since this area could most easily be served by sewer and is well provided with through roads. Low density, multi-family development immediately south of the proposed expanded business district serves as a transition between the business district and single family residential areas to the south. The topographic character of the upper Magruder Branch stream valley is such that town houses oriented toward the stream valley park could provide a variety in housing which would be quite pleasing.

The upper Great Seneca watershed could be served with sewer by the installation of a pumping station in the general area of Woodfield School Road. Development at a somewhat higher density than permitted by existing zoning, but lower than that proposed in the Magruder Branch subwatershed, is recommended for the Great Seneca watershed.

With the exception of a small town house complex immediately east of the business district, the Patuxent, Bennett and Little Bennett watersheds, and those areas immediately beyond the Damascus community are proposed to continue to be developed at the density permitted by the existing R-R zoning.

II FORECASTS

COMPREHENSIVE
PLANNING
POLICIES

FORECASTS

Introduction

The Montgomery County Planning Board has been designated to produce forecasts for use by various governmental agencies and for the benefit of the public generally. Population, employment, and dwelling units are the three elements measured. These forecasts do not attempt to be precise in terms of the near future or in terms of very small subareas of the County. They are long range forecasts, with a focus on the 5-10 year time period from the present, and on the County as a whole, with estimates for planning and policy areas within it.

At the present time, there is greater uncertainty about international and national economic conditions than was the case several years ago. As a consequence, it is very difficult to predict with any degree of assurance what the longer term numbers will ultimately be. A number of long range trends appear to be emerging, but their cumulative impact is not yet clear. The Planning Board recently convened a Crystal Ball Chautauqua, precisely for the purpose of engaging the Montgomery County Community in a dialogue about the probable effect of these trends. The results of this discussion will be further analyzed in future reports.

In the meantime, the Planning Board has made a judgement that it is prudent, as a general assumption, to lower the previous official Board forecasts somewhat. Accordingly, the forecasts in this document have shifted as follows: the previous "High" forecast has been dropped; the previous "Intermediate" forecast is now the new "High;" and a new "Low" has been added. The figures used in the new forecasts are the same as were outlined in last year's Growth Policy report, entitled "Land Supply and Demand."

Adoption by the Board, after public hearing, of this report on Comprehensive Planning Policies will constitute adoption of these new forecasts, as well as the development thresholds outlined further on in this report. The Board recognizes that it will be party to the next round of the Cooperative Forecasting process, coordinated through the Washington Metropolitan Area Council of Governments; and that this next round, to come out in 1983, may revise the current numbers. In spite of the relatively short time interval until the new COG work is ready, it still seems desirable to reflect the current climate with this present change, rather than to continue to maintain the previous high end of the range any longer. However, for regional planning purposes, the Round II Cooperative Forecasts will remain in effect until formally revised by the Council of Governments.

Household and Population

Since the Fall of 1980, new economic conditions have been emerging for the home building industry. Long-term interest rates are outpacing inflation with no relief in sight. The County's population and average household size were found to be lower in the 1980 Census than had been projected by the Cooperative Forecasting of the Council of Governments. In response to these changes, the sixth growth policy report, Land Supply and Demand (November 1980), presented four possible scenarios for Montgomery County's long range population and housing growth. The Demand report was prepared as a first step toward revising the Cooperative Forecast.

The basic high scenario assumes a 4,000 per year increase in housing units--the same dwelling unit assumption used for COG Round 2 "Intermediate" forecast. The basic low scenario assumes a 2,000 per year dwelling unit growth. In order to put this growth range in perspective; between 1975 and 1979, Montgomery County averaged 3,000 dwelling units per year. The average for the past three years (1978-1980) was 4,000 units per year.

With each of the basic scenarios, an alternative birthrate assumption is made. Both birthrate assumptions are higher than recent rates. The number of women in the so called fertile age groups (15-44) is now at an all time high. In fact, there is some evidence that women have been delaying births, and the aging of women born soon after World War II is such that many of these women will now have to make a decision to have or not have children soon. There is also the possibility that the birthrate will reach a higher level because women will change their life style habits of the last decade or so and have larger families. The alternative birthrate assumption attempts to place a reasonable upper bound on the uncertainty of future birthrate trends. The alternative birthrate assumption is 20 percent greater than the basic assumption and assumes a fertility rate similar to that which existed ten years ago.

The most significant discovery from the 1980 Census, to date, is the dramatic decline of persons per household in the County. In 1970, the Census reported 3.30 persons per household; 1980 shows a decrease of 16.1 percent to 2.77. This declining trend has been apparent throughout the decade of the 1970's when the Census Update Survey, taken in 1974 and 1977, yielded average household size estimates of 3.06 and 2.93, respectively. This decline is attributable to social and economic changes in society, including declining birthrate, the increase in the number of one-person households (young adults and the elderly), increase in divorce rates which frequently results in two households rather than one, delayed marriages, and longevity rates.

The trend for fewer persons per household has been mitigated slightly by the popularity of unrelated individuals living together in one household. Traditionally, only two basic types of households existed, families (married and/or single parent with children) and single persons. Living arrangement of unrelated households are now "mingles." These households form for any number of reasons ranging from informal marriages to basic economics. It is expected this life style will continue but not in sufficient numbers to offset the general decline of household size.

Declining household size has significant ramifications for forecast users. Usage rate of various goods and services are often calculated as a per capita or per household basis. As household size per dwelling unit go down, generally consumption per capita goes up. People in smaller households use their appliances as often or slightly less than larger households. Air conditioning for three people instead of four requires more than 3/4 of electricity. The washing machine may run as often for three people as it does for four, but with fewer clothes in it. The converse holds true for consumption per dwelling unit. As household size declines, generally consumption per dwelling unit also declines.

Forecast users must carefully examine their consumption parameters to avoid serious miscalculations. A constant per capita consumption rate projected for the future may seriously underestimate future demand. Although slow growth is projected for population, dwelling units may increase an average of 4,000 units per year. This dispersion should be reflected in future demand projections. A constant per dwelling unit rate

projected for the future may overestimate future demand. Such a rate would fail to recognize the declining number of people in each unit.

As a result of declining fertility, the aging of the "baby boom" generation and the increasing longevity of the overall population, it is anticipated that the median age of County residents will increase. In 1980, the median age of the United States population was 30 years, up from 28 years in 1970. In advance of obtaining 1980 Census results for the County, the estimated median age for Montgomery County is 31.6 years. This is higher than the 1970 median age of the County of 28 years.

The County appears to be aging faster than the nation. Compared to Maryland, which had a median age of 30.3 years, Montgomery County has fewer young adults. The cause of this phenomenon is open to speculation. (Speculation is all that is possible since people who are not here cannot answer questionnaires.) Housing prices in the County are high. Education levels in the County are extraordinary. Entry level in many professional areas are requiring post graduate training before hiring. Perhaps other jurisdictions provide a more suitable life style for young adults than does Montgomery County.

An aging population will slowly change the character of Montgomery County. The crime associated with juvenile populations could be expected to be lower. Schools are also likely to become a less significant part of the County's budget. However, health care systems are likely to increase in importance. Fewer people per household and high building and maintenance costs will tend to reduce the size of new dwelling units. Adult centered activities will be the community focal point rather than child oriented.

As soon as detailed information becomes available from the 1980 Census, the most current demographic dynamics will be fully incorporated into the forecasts for Montgomery County. It is expected that this will occur sometime early in 1982.

TABLE 2
MONTGOMERY COUNTY DEVELOPMENT FORECAST¹

<u>People</u>					
	<u>1980</u>	<u>1985</u>	<u>1990</u>	<u>1995</u>	<u>2000</u>
High		587,000	622,000	668,000	711,000
Low	579,000	577,300	568,900	574,200	590,000

State Planning Forecast	-	589,000	606,000	-	628,000
<u>Households</u>					
High		225,100	247,400	270,000	290,100
Low	207,195	216,600	226,600	236,600	246,600
<u>Employment</u>					
High		331,100	375,000	414,000	460,000
Low	306,500	324,800	367,000	391,000	419,300

¹ Forecast has not been revised to reflect final counts from the 1980 Census. These forecasts represent the current judgment of the Planning Board staff. The process of amending the Round II Cooperative Forecast has started and is expected to be completed by January 1983.

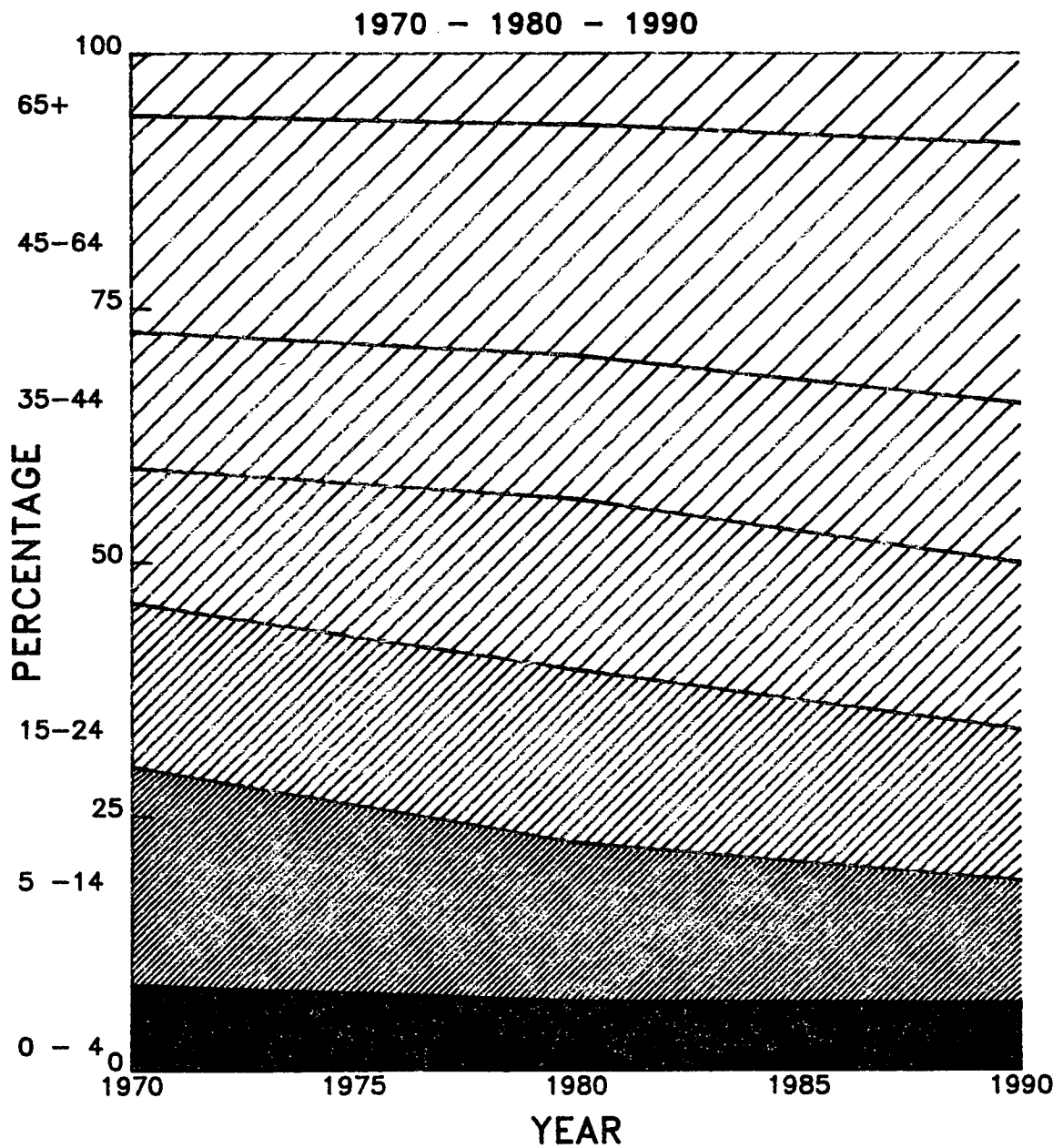
Source: Montgomery County Planning Board and Special Projects Division.

TABLE 3
PERCENTAGE DISTRIBUTION OF MONTGOMERY COUNTY
POPULATION BY AGE - 1970-80-90

<u>Age Group</u>	<u>1970</u>	<u>1980</u>	<u>1990</u>
0 - 4	8.2	6.6	6.4
5 - 14	21.6	15.7	12.1
15 - 24	16.1	17.0	14.9
25 - 34	13.3	16.8	16.4
35 - 44	13.4	14.1	15.7
45 - 64	21.2	22.7	25.5
65+	<u>6.2</u>	<u>7.1</u>	<u>9.0</u>
	100.0	100.0	100.0

CHART I

DISTRIBUTION OF MONTGOMERY COUNTY POPULATION BY AGE



SOURCE: M-NCPPC Special Projects Division

TABLE 4
HIGH SCENARIO (BASIC)
POPULATION FORECAST - FALL 1980

Policy Areas and Planning Areas	Population			Forecast Change 1980-1990
	1980	1985	1990	
SILVER SPRING	57,800	56,300	57,700	-100
36 Silver Spring	32,500	32,500	34,500	2,000
37 Takoma Park	25,300	23,800	23,200	-2,100
BETHESDA	83,600	83,000	87,000	3,400
35 Bethesda	83,600	83,000	87,000	3,400
NORTH BETHESDA	76,600	74,500	76,900	300
26 Rockville	44,800	43,000	42,700	-2,100
30 N. Bethesda	31,800	31,600	34,200	2,400
KENSINGTON-WHEATON	148,100	142,600	142,000	-6,100
27 Aspen Hill	43,400	43,700	43,600	200
31 Wheaton	73,200	68,700	67,700	-5,500
32 Kemp Mill	31,500	30,200	30,700	-800
I-270 CORRIDOR	70,300	83,600	97,300	27,000
13 Clarksburg	2,100	2,000	2,200	100
19 Germantown	9,000	14,600	21,500	12,500
20/21 Gaithersburg	59,200	67,000	73,600	14,400
COLESVILLE	45,300	44,100	48,300	3,300
28 Cloverly	10,100	9,800	10,300	200
33 White Oak	26,000	24,900	26,400	400
34 Fairland	9,200	9,400	11,600	2,400
POTOMAC	49,900	53,100	57,100	7,200
24 Darnestown	4,000	5,100	6,200	2,200
25 Travilah	9,200	9,800	12,200	3,000
29 Potomac	36,700	38,200	38,700	2,000
OLNEY	20,100	20,100	22,200	2,100
23 Olney	20,100	20,100	22,200	2,100
DAMASCUS	20,100	22,400	25,000	4,900
10 Bennett				
11 Damascus				
14 Goshen	20,100	22,400	25,000	5,000
15 Patuxent				
22 Rock Creek				
POOLESVILLE	7,000	7,300	7,800	800
12 Dickerson				
16 Martinsburg	7,000	7,300	7,800	800
17 Poolesville				
18 Lower Seneca				
TOTAL COUNTY	578,800	587,000	621,300	42,500

Source: M-NCPPC Special Projects Division.

Note: The total 1980 figure represents 200 short of the 1980 Census total County figure. 1980 planning area figures are estimates as data from the 1980 Census is unavailable. This is a preliminary forecast developed as part of the Sixth Growth Policy Report, Land Demand, November 1980 and is to be used for County-wide planning purposes. The regional cooperative forecasting processes will complete its third round of revisions by January 1983, and will provide a consistent set of forecast assumptions for all Washington area jurisdictions.

All figures have been rounded to the nearest hundred.

TABLE 5
HIGH SCENARIO (BASIC)
DWELLING UNIT FORECAST - FALL 1980

Policy Areas and Planning Areas	Dwelling Units			Forecast Change 1980-1990
	1980	1985	1990	
SILVER SPRING	25,500	25,700	26,800	1,300
36 Silver Spring	15,200	15,300	16,400	1,200
37 Takoma Park	10,300	10,400	10,400	100
BETHESDA	33,800	35,200	37,400	3,600
35 Bethesda	33,800	35,200	37,400	3,600
NORTH BETHESDA	26,500	28,300	30,800	4,300
26 Rockville	14,800	15,600	16,500	1,700
30 N. Bethesda	11,700	12,700	14,300	2,600
KENSINGTON-WHEATON	51,600	54,300	56,800	5,200
27 Aspen Hill	14,700	16,700	17,900	3,200
31 Wheaton	25,700	26,000	26,700	1,000
32 Kemp Mill	11,200	11,600	12,200	1,000
I-270 CORRIDOR	25,200	31,200	38,100	12,900
13 Clarksburg	600	700	800	200
19 Germantown	3,200	5,100	7,900	4,700
20/21 Gaithersburg	21,400	25,400	29,400	8,000
COLESVILLE	15,000	16,400	18,600	3,600
28 Cloverly	3,000	3,200	3,600	600
33 White Oak	9,000	9,700	10,600	1,600
34 Fairland	3,000	3,500	4,400	1,400
POTOMAC	14,500	17,400	19,700	5,200
24 Darnestown	1,400	1,700	2,100	700
25 Travilah	2,500	3,200	4,000	1,500
29 Potomac	10,600	12,500	13,600	3,000
OLNEY	5,900	6,700	7,800	1,900
23 Olney	5,900	6,700	7,800	1,900
DAMASCUS	6,400	7,500	8,700	2,300
10 Bennett				
11 Damascus				
14 Goshen	6,400	7,500	8,700	2,300
15 Patuxent				
22 Rock Creek				
POOLESVILLE	2,200	2,400	2,700	500
12 Dickerson				
16 Martinsburg				
17 Poolesville	2,200	2,400	2,700	500
18 Lower Seneca				
TOTAL COUNTY	206,600	225,100	247,400	40,800

Source: M-NCPPC Special Projects Division.

Note: The total 1980 figure represents the preliminary 1980 Census not the final count. 1980 planning area figures are estimates as data from the 1980 Census is unavailable. This is a preliminary forecast developed as part of the Sixth Growth Policy Report, Land Demand, November 1980 and is to be used for County-wide Planning purposes. The regional cooperative forecasting processes will complete its third round of revisions by January 1983, and will provide a consistent set of forecast assumptions for all Washington area jurisdictions.

All figures have been rounded to the nearest hundred.

TABLE 6
LOW SCENARIO (BASIC)
POPULATION FORECAST - FALL 1980

Policy Areas and Planning Areas	Population			Forecast Change 1980-1990
	1980	1985	1990	
<u>SILVER SPRING</u>	57,800	59,700	58,000	200
36 Silver Spring	32,500	34,500	33,900	1,400
37 Takoma Park	25,300	25,200	24,100	-1,200
<u>BETHESDA</u>	83,600	85,200	85,700	2,100
35 Bethesda	83,600	85,200	85,700	2,100
<u>NORTH BETHESDA</u>	76,600	76,100	74,200	-2,400
26 Rockville	44,800	44,300	42,100	-2,700
30 N. Bethesda	31,800	31,800	32,100	300
<u>KENSINGTON-WHEATON</u>	148,100	140,500	133,200	-14,900
27 Aspen Hill	43,400	41,400	38,900	-4,500
31 Wheaton	73,200	69,400	66,000	-7,200
32 Kemp Mill	31,500	29,700	28,300	-3,200
<u>I-270 CORRIDOR</u>	70,300	75,800	75,900	5,600
13 Clarksburg	2,100	1,900	1,800	-300
10 Germantown	9,000	12,900	16,000	7,000
20/21 Gaithersburg	59,200	61,000	58,100	-1,100
<u>COLESVILLE</u>	45,300	42,100	41,600	-3,700
28 Cloverly	10,100	9,400	9,200	-900
33 White Oak	26,000	23,500	22,900	-3,100
34 Fairland	9,200	9,200	9,500	300
<u>POTOMAC</u>	49,900	49,600	51,600	1,700
24 Darnestown	4,000	5,400	6,200	2,200
25 Travilah	9,200	8,700	9,500	300
29 Potomac	36,700	35,500	35,900	-800
<u>OLNEY</u>	20,100	18,600	18,000	-2,100
23 Olney	20,100	18,600	18,000	-2,100
<u>DAMASCUS</u>	20,100	22,700	23,900	3,800
10 Bennett				
11 Damascus				
14 Goshen	20,100	22,700	23,900	3,800
15 Patuxent				
22 Rock Creek				
<u>POOLESVILLE</u>	7,000	7,000	6,800	-200
12 Dickerson				
16 Martinsburg	7,000	7,000	6,800	-200
17 Poolesville				
18 Lower Seneca				
<u>TOTAL COUNTY</u>	578,800	577,300	568,900	-9,900

Source: M-NCPPC Special Projects Division.

Note: The total 1980 figure represents 200 short of the 1980 Census total County figure. 1980 planning area figures are estimates as data from the 1980 Census is unavailable. This is a preliminary forecast developed as part of the Sixth Growth Policy Report, Land Demand, November 1980 and is to be used for County-wide planning purposes. The regional cooperative forecasting processes will complete its third round of revisions by January 1983, and will provide a consistent set of forecast assumptions for all Washington area jurisdictions.

All figures have been rounded to the nearest hundred.

TABLE 7
LOW SCENARIO (BASIC)
DWELLING UNIT FORECAST - FALL 1980

Policy Areas and Planning Areas	Dwelling Units			Forecast Change 1980-1990
	1980	1985	1990	
SILVER SPRING	25,500	25,600	25,700	200
36 Silver Spring	15,200	15,200	15,300	100
37 Takoma Park	10,300	10,400	10,400	100
BETHESDA	33,800	34,800	35,800	2,000
35 Bethesda	33,800	34,800	35,800	2,000
NORTH BETHESDA	26,500	28,200	29,700	3,200
26 Rockville	14,800	15,700	16,400	1,600
30 N. Bethesda	11,700	12,500	13,300	1,600
KENSINGTON-WHEATON	51,600	52,400	53,000	1,400
27 Aspen Hill	14,700	15,300	15,600	900
31 Wheaton	25,700	25,900	26,200	500
32 Kemp Mill	11,200	11,200	11,200	0
I-270 CORRIDOR	25,200	27,600	30,300	5,100
13 Clarksburg	700	700	700	100
19 Germantown	3,200	4,300	5,800	2,600
20/21 Gaithersburg	21,400	22,600	23,800	2,400
COLESVILLE	15,000	15,600	16,400	1,400
28 Cloverly	3,000	3,200	3,400	400
33 White Oak	9,000	9,100	9,300	300
34 Fairland	3,000	3,300	3,700	700
POTOMAC	14,500	16,300	18,200	3,700
24 Darnestown	1,400	1,800	2,100	700
27 Travilah	2,500	2,900	3,300	800
29 Potomac	10,600	11,600	12,800	2,200
OLNEY	5,900	6,300	6,600	700
23 Olney	5,900	6,300	6,600	700
DAMASCUS	6,400	7,500	8,500	2,100
10 Bennett				
11 Damascus				
14 Goshen	6,400	7,500	8,500	2,100
15 Patuxent				
22 Rock Creek				
POOLESVILLE	2,200	2,300	2,400	200
12 Dickerson				
16 Martinsburg	700	2,300	2,400	200
17 Poolesville				
18 Lower Seneca				
TOTAL COUNTY	206,600	216,600	226,600	20,000

Source: M-NCPPC Special Projects Division.

Note: The total 1980 figure represents the preliminary 1980 Census not the final count. 1980 planning area figures are estimates as data from the 1980 Census is unavailable. This is a preliminary forecast developed as part of the Sixth Growth Policy Report, Land Demand, November 1980 and is to be used for County-wide planning purposes. The regional cooperative forecasting processes will complete its third round of revisions by January 1983, and will provide a consistent set of forecast assumptions for all Washington area jurisdictions.

All figures have been rounded to the nearest hundred.

Population Density

Consistent with the County's General Plan, population densities, both existing and forecasted, follow the wedges and corridor pattern. The higher densities in the County are found alongside the major transportation routes. The lowest densities occur in areas preserved for agriculture and open space. The County's highest densities are located in those areas adjacent to Washington, D.C. Densities decline as the distance from Washington increases. They decline still further in the wedge areas of the County.

Population densities by planning area are somewhat deceptive. Each planning area is a different size than the others. Areas of high population density are effectively averaged over the entire area, although the density in that area may be highly concentrated.

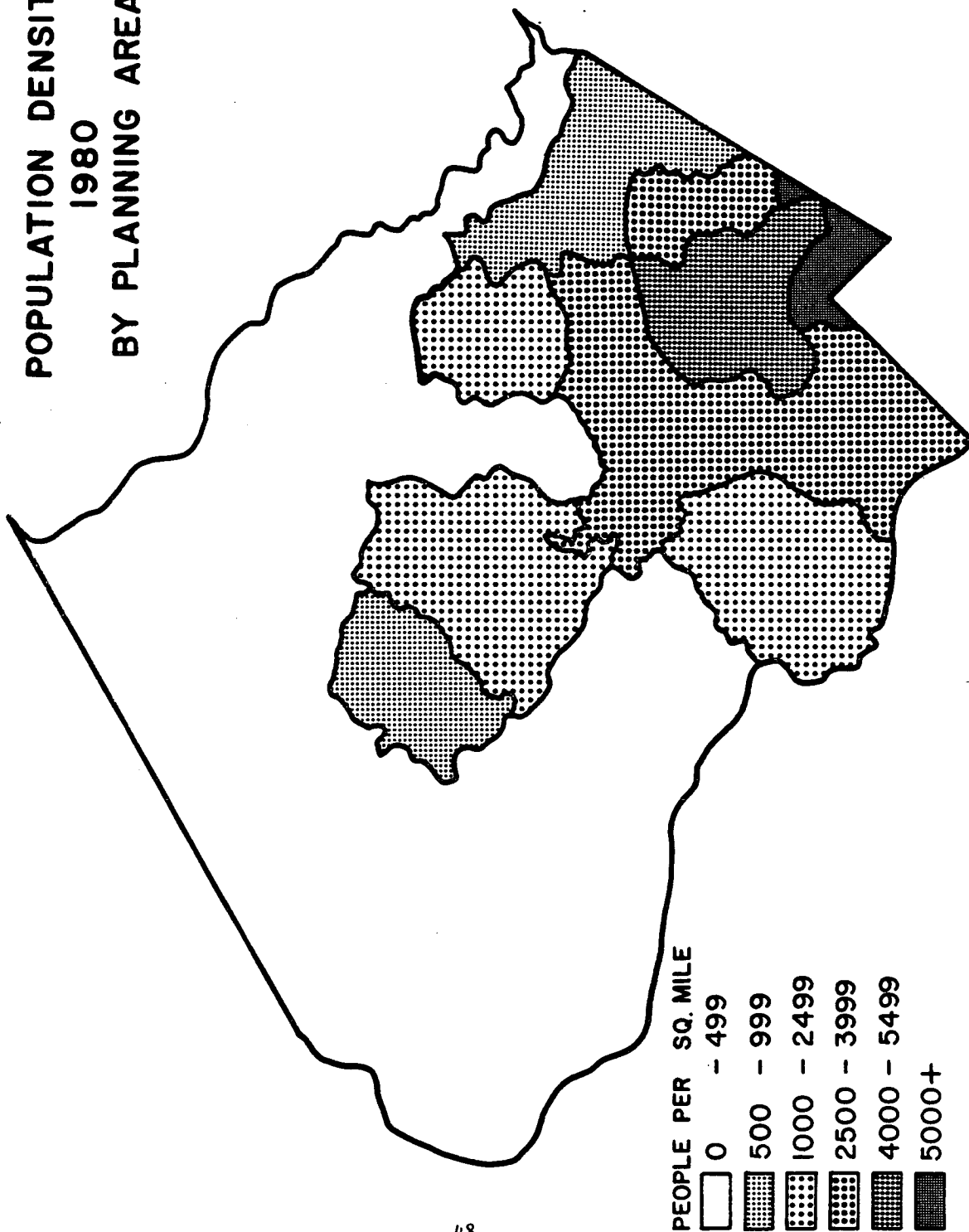
Over one third of the County's land area has and will continue to have a distinctly rural character. Density of 500 persons per square mile is relatively sparse given the County's proximity to the center of the Washington region. Five hundred people per

TABLE 8
POPULATION DENSITY BY PLANNING AREA
1980 and 2000

Planning Area	Square Miles	Estimated ¹ Population 1980	Density People/ Sq. Mile 1980	Population 2000	Density People/ Sq. Mile 2000
Damascus					
10, 11, 14, 15	75.9	15,197	200	21,335	281
Poolesville					
12, 16, 17, 18	106.8	6,980	65	9,784	92
Clarksburg (13)	15.4	2,108	137	3,500	227
Germantown (19)	15.8	8,892	563	37,219	2,355
Gaithersburg (20/21)	31.6	58,750	1,859	82,398	2,608
Rock Creek (22)	17.0	4,755	280	8,774	516
Olney (23)	49.7	19,958	402	28,602	575
Darnestown (24)	18.0	3,924	218	7,767	432
Travilah (25)	23.0	9,126	397	13,686	595
Rockville (26)	14.0	44,466	3,176	42,688	3,049
Aspen Hill (27)	13.2	43,087	3,264	48,082	3,642
Cloverly (28)	13.2	10,054	762	13,330	1,010
Potomac (29)	31.5	36,368	1,155	43,391	1,378
N. Bethesda (30)	9.0	31,573	3,508	39,489	4,387
Wheaton (31)	14.9	72,644	4,875	71,940	4,820
Kemp Mill (32)	6.0	31,247	5,208	31,595	5,266
White Oak (33)	10.0	25,755	2,576	29,822	2,982
Fairland (34)	13.3	9,172	690	16,769	1,261
Bethesda (35)	20.9	83,006	3,972	95,333	4,561
Silver Spring (36)	4.3	32,243	7,498	41,462	9,642
Takoma Park (37)	2.5	25,094	10,038	22,369	8,948

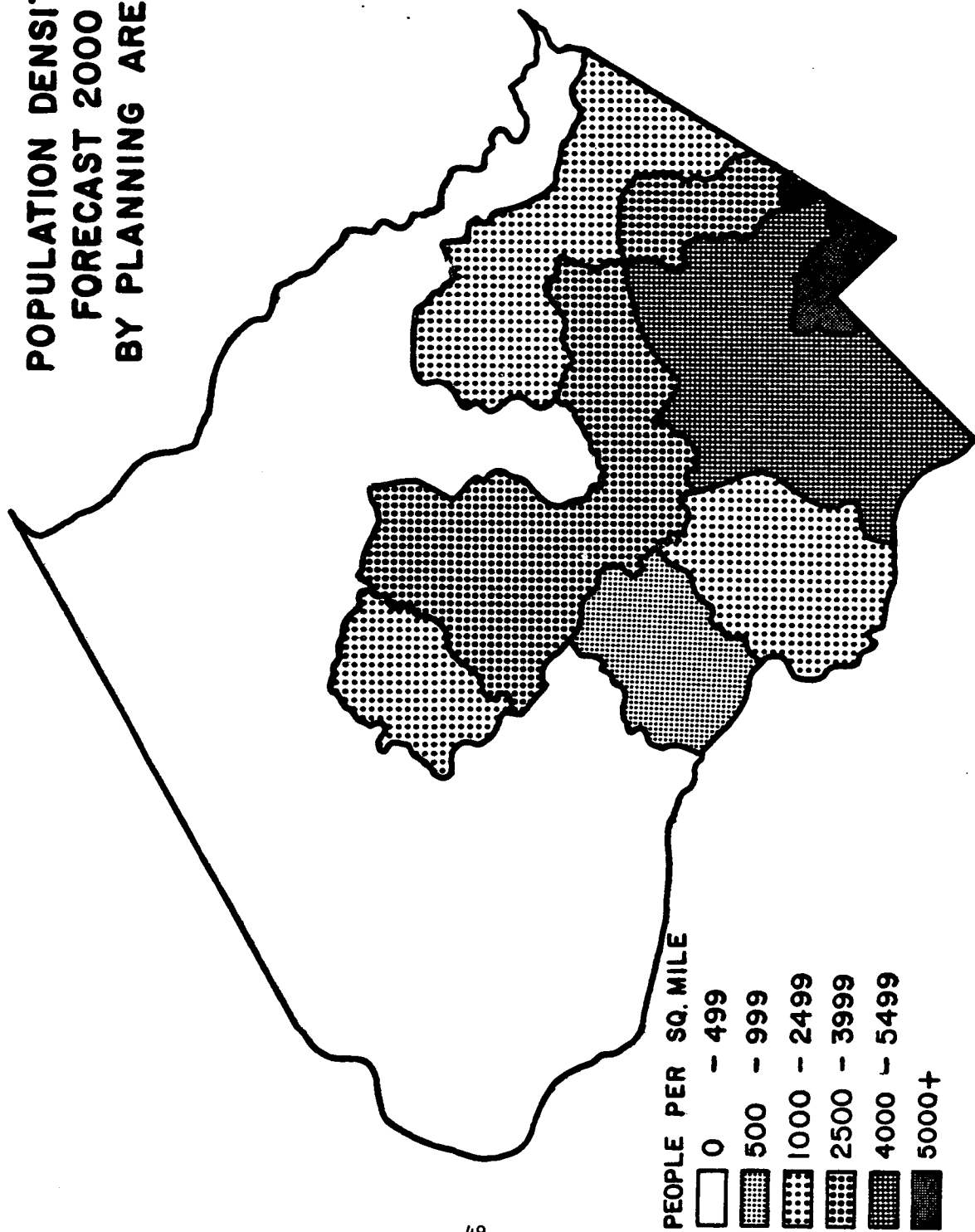
¹ Based on preliminary 1980 Census count.

POPULATION DENSITY 1980 BY PLANNING AREA



MAP 3

**POPULATION DENSITY
FORECAST 2000
BY PLANNING AREA**



SOURCE: M-NCPPC Special Projects Division

square mile averages out to more than one acre per person. Actual densities in the Poolesville forecast area go down to 65 persons per square mile.

Densities will generally be higher in 2000 than in 1980. However, in maturing areas where new construction fails to outpace declines in household size, there will be declines in population density--Takoma Park, Wheaton and Rockville. By far, the most dramatic change will be occurring in Germantown. By the year 2000, it is anticipated to be a full fledged corridor city. Its density will increase almost five fold, from 563 persons per square mile to 2,355. In 2000, Germantown's overall density will be comparable to that of White Oak in 1980.

Employment

The employment forecast has not been altered from the Round II Cooperative Forecast. As an economic entity, Montgomery County is closely tied to the rest of the Washington area. In the absence of a new regional employment forecast, a County forecast would be hazardous at best. Although the forecast has not been updated, the estimate of current at-place employment has. In the course of Round III, the new estimate will be taken into account.

The foundation of the Washington area economy, the federal government, may be shaken by the current administration. What was once the most predictable segment of the job market, is now open to the greatest speculation. The impact of President Reagan's fiscal and economic policy on the region have yet to be realized. Historically, presidents have had little impact on the growth of the federal establishment. President Reagan's recent budget victories may result in the current administration being an exception to the historic generalization. Even if the administration does have a significant impact on reducing federal employment, its actual bearing on the Washington region is still unknown. A reduction in federal employees does not necessarily result in fewer federal employees in the Washington region. The federal field offices may experience a more dramatic decline in the first round of reductions than the headquarters operation here. The shift toward a larger defense budget may more than offset some employment declines in other areas.

In periods of federal employment stability, the private sector has remained strong in the region and especially in Montgomery County. The federal government has been contracting out work to the private sector. These contractors find it beneficial to work in Montgomery County. The County has also been developing a telecommunications industry; both to provide for audio and computer data transmission over satellite channels. There is an ever growing agglomeration of computer related activities. There are some computer hardware assembly and sale establishments. Computer programming contractors and software firms abound. Several large service bureaus, which sell both computer time and programming service, are located in the County.

Between March 1977 and March 1979, the number of employees in Montgomery County grew by more than 33,000. This is far above its historical rate of growth of 9,000 jobs per year. Service employment showed the largest gain--more than 9,400. It was followed by retail employment with a gain of more than 7,000. The most dramatic growth was in the Transportation, Communications and Public Utilities sector. The 2,400 additional employees represent a growth of 41 percent from the same industry in 1977. In that same period, total at-place employment grew by 13 percent.

TABLE 9
MONTGOMERY COUNTY AT-PLACE EMPLOYMENT
MARCH 1977 - MARCH 1979

	1977	1979	Change Between 1977 & 1979
Agriculture & Mining ¹	1,724	1,644	(80)
Construction ¹	22,557	26,768	4,211
Manufacturing ¹	14,347	17,248	2,901
Transportation, Communi- cation & Public Utilities ¹	5,919	8,317	2,398
Wholesale Trade ¹	8,071	8,392	321
Retail Trade ¹	45,182	52,645	7,463
Finance, Insurance ¹ & Real Estate	19,946	23,307	3,361
Services ¹	64,376	73,817	9,441
Other ² (Self employed nonclassifiable)	15,200	16,200	1,000
Federal ³ (Including military)	43,371	44,895	1,524
State and Local ⁴	<u>22,400</u>	<u>23,400</u>	<u>1,000</u>
Total At-Place Employment	263,093	296,633	33,540

¹ County Business Patterns, U.S. Department of Commerce, Bureau of the Census.

² County Business Patterns, M-NCPPC estimate.

³ National Capital Planning Commission.

⁴ Estimate from Public Service Program, Montgomery County plus State Employment.

III STATUS

COMPREHENSIVE
PLANNING
POLICIES

STATUS OF DEVELOPMENT IN PROGRESS

The Development Process

The conversion of land from rural to urban uses involves a complex series of interlocking actions on the part of land owners, developers, mortgage bankers, architects, engineers, governmental agencies, real estate salesmen, and many others. At any given moment, there are different development projects at different stages in this process. The chart below shows schematically the sequence of a few of the steps that involve a significant approval action by governmental agencies. The Planning Board maintains data on the number of projects that have completed each of these stages; and uses it to judge the amount of development that is moving through the "pipeline" of the approval process, towards ultimate completion and occupancy by new residents and employees.

Measuring the Development Pipeline

Table 10 below shows the number of units that were approved in 1980 in each of these successive stages. Because the "pipeline" is a moving target at all times, it is somewhat difficult to convey a snapshot of it at any given moment. The numbers shown in the table are the total number that were approved in each category over the same twelve month period. Some projects may be "double-counted," by virtue of having moved from one stage to the next during this time. But, since the average total elapsed time to complete this cycle is usually about three years, the annual totals for each stage are a relatively good indication of what is happening in the pipeline. Those figures can be used to make judgements about the varying pace of activity from year to year.

For instance, this annual 1980 data indicates that Montgomery County has been countering the pronounced national trend to drastically lowered housing construction. New housing completions remained at a high level in the County in 1980 when 4,978 units were completed. This was the highest number of units completed since 1974 and was a 29 percent increase over 1979 when 3,855 units were completed.

This contrasts with a 1979-80 drop in national housing production which was 27 percent. This strong 1980 housing rate in the County was due to a substantial number of apartment units constructed, most of which were under federal mortgage insurance and subsidy programs, and a substantial increase in single family attached construction (townhouses). Total single family detached construction actually declined slightly, consistent with national market trends.

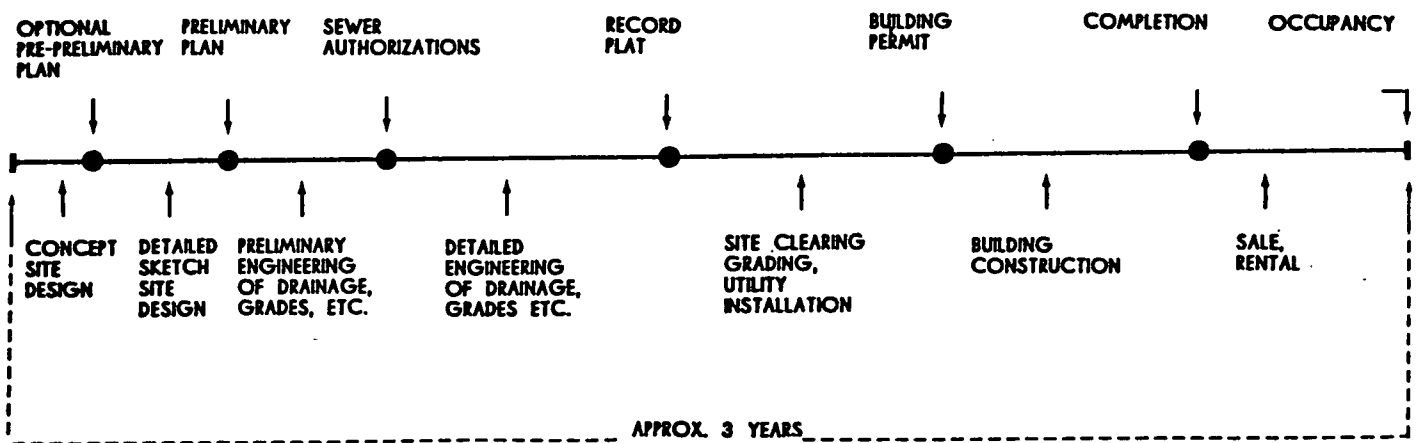
The longer range indicators of residential construction activity in Montgomery County remained at high levels. Approved preliminary subdivision plans for 1980 reached a peak with 12,720 lots being approved (see Table 11). This was the greatest number of lot approvals since this data series was begun in 1972, and was 21 percent above the previous peak year in 1978. The tremendous increase in preliminary plan approvals was due to a huge increase in single family attached subdivision activity, which increased by 205 percent over the previous peak year of 1978. This indicates that development had received a distinct market shift to less expensive and more energy efficient attached forms of housing

TABLE 10

MONTGOMERY COUNTY DEVELOPMENT REPORT FOR 1980
 (Number of Permits and Actions Processed Between January and December 1980)

	Single Family Detached Units	Town- house Units	Multi- Family Units	Total Housing Units
RESIDENTIAL				
Sewer Authorizations Issued	4,264	4,652	3,319	12,235
Pre-Preliminary Plans Approved (87 Plans)				
Preliminary Plans Approved (249 Plans)	6,019	5,792	909	12,720
Plats Recorded (487 Record Plats)	1,812	1,814	1,163	4,780
Building Permits Issued	1,649	1,722	589	3,960
Completions	1,207	2,073	1,698	4,978
Demolitions	23	0	0	23
COMMERCIAL				
Sewer Authorizations Issued	2.6 Million Square Feet - Gross Floor Area			
Completions	1.4 Million Square Feet - Gross Floor Area			

**SCHEMATIC DIAGRAM
OF
PERMIT APPROVAL PROCESS**



Subdivision plans that actually proceeded to the record plat stage during 1980 showed a slight decrease over 1979 (Table 12). This decrease, however, was only 11 percent or far less than would be anticipated due to the severely depressed national housing market. Most of this drop was due to a decline in single family detached record plats from the high peak achieved in 1979. Units in recorded plats for single family attached and apartments actually increased in 1979-80.

Building permits for residential housing units, a short-term indicator of housing construction primarily within the next year, fell from the peak total achieved in 1979 (Table 13). This drop, however, was only 18 percent to a total of 3,960 units, remaining well above the drop in national activity. A major drop occurred in apartment permits, reflecting a reduced commitment under federal housing mortgage guarantee and subsidy programs. This decline is likely to continue as these commitments are slated to be reduced by recent federal budget cuts in FY-82 to approximately 50 percent of their previous allocations in the Washington Metropolitan Area. Total building permits for single family detached and attached units virtually matched the high levels achieved in 1979.

Building permits and other indicators for new residential construction would suggest that the level of construction activity achieved in 1980 in Montgomery County will probably be maintained at least through most of 1981. Based on completions in the first quarter of 1981 of 1400 units, as many as 4000 can be expected by the end of the year. This is indicative of a strong market considering the severe mortgage constraints existing in most of 1980 and so far in 1981. In the long run, however high interest rates and inflation should temper the County's housing growth.

TABLE 11

BUILDING PERMITS, BY JURISDICTION
IN THE WASHINGTON METROPOLITAN AREA
1974-1980

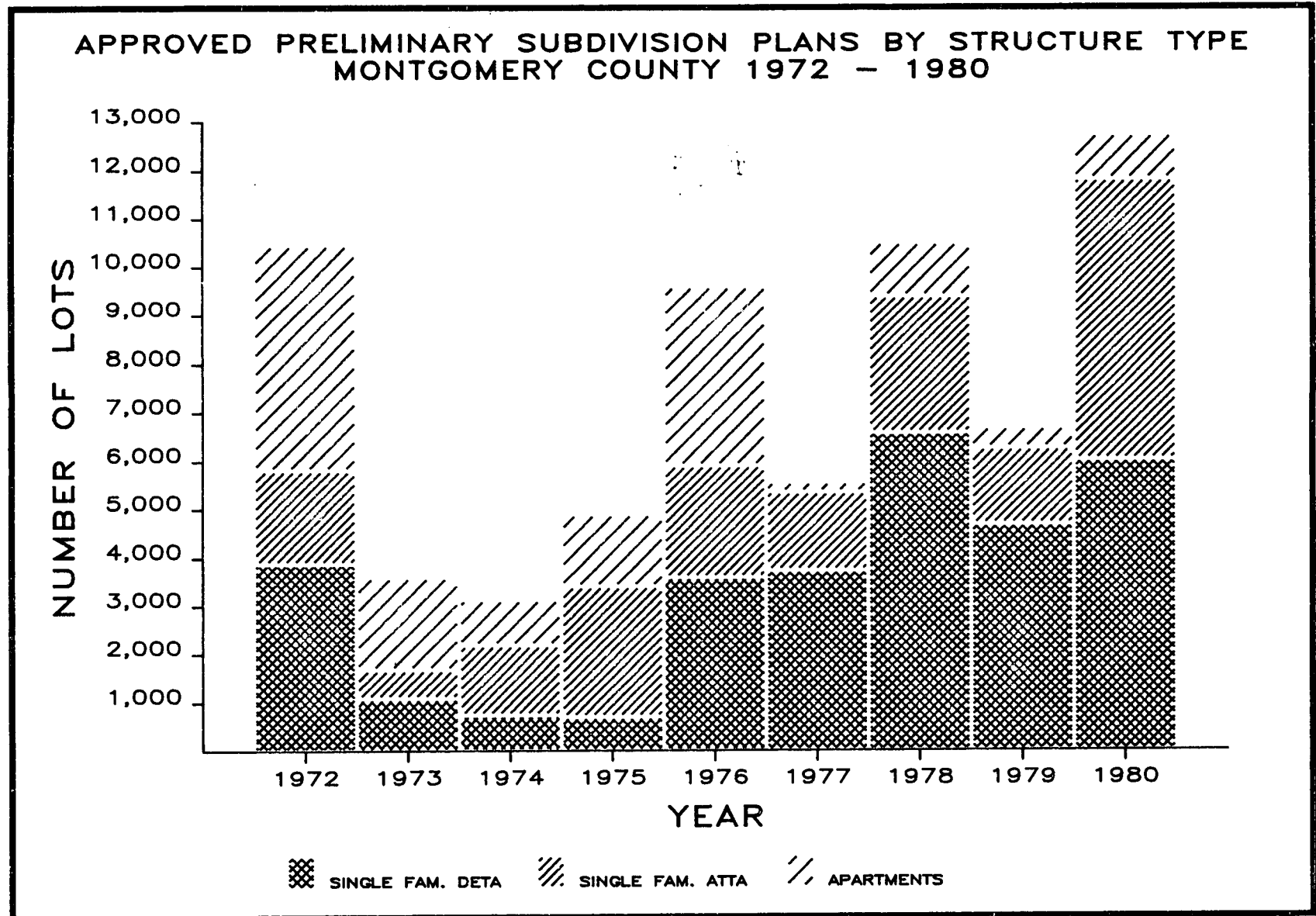
<u>A. Number (#)</u>	<u>1974</u>	<u>1975</u>	<u>1976</u>	<u>1977</u>	<u>1978</u>	<u>1979</u>	<u>1980</u>	<u>Total</u>
Montgomery Co.	1,629	1,904	3,300	3,616	4,255	4,857	3,960	23,521
Washington, D.C.	1,383	446	1,987	2,194	2,575	1,652	2,647	12,884
Prince George's Co.	2,833	1,490	2,049	3,260	2,240	2,469	1,893	16,234
Fairfax Co.	<u>4,834</u>	<u>3,157</u>	<u>5,724</u>	<u>9,908</u>	<u>8,046</u>	<u>8,423</u>	<u>6,788</u>	<u>46,880</u>
TOTAL	10,679	6,997	13,060	18,978	17,116	17,401	15,288	99,519

<u>B. Percent (%)</u>	<u>1974</u>	<u>1975</u>	<u>1976</u>	<u>1977</u>	<u>1978</u>	<u>1979</u>	<u>1980</u>	<u>Total</u>
Montgomery Co.	15.3	27.2	25.2	19.0	24.9	27.9	25.9	23.6
Washington, D.C.	13.0	6.4	15.2	11.6	15.0	9.5	17.3	12.9
Prince George's Co.	26.5	21.3	15.7	17.2	13.1	14.2	12.4	16.3
Fairfax Co.	<u>45.3</u>	<u>45.1</u>	<u>43.8</u>	<u>52.2</u>	<u>47.0</u>	<u>48.4</u>	<u>44.4</u>	<u>47.1</u>
TOTAL	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

SOURCE: Montgomery County data from the Department of Environmental Protection, Montgomery County, all other data from U.S. Census C-40 and C-41 Construction Reports.

NOES: Percentage detail may not add to total due to rounding.

CHART 2



SOURCE: M-NCPPC Special Projects Division

TABLE 12

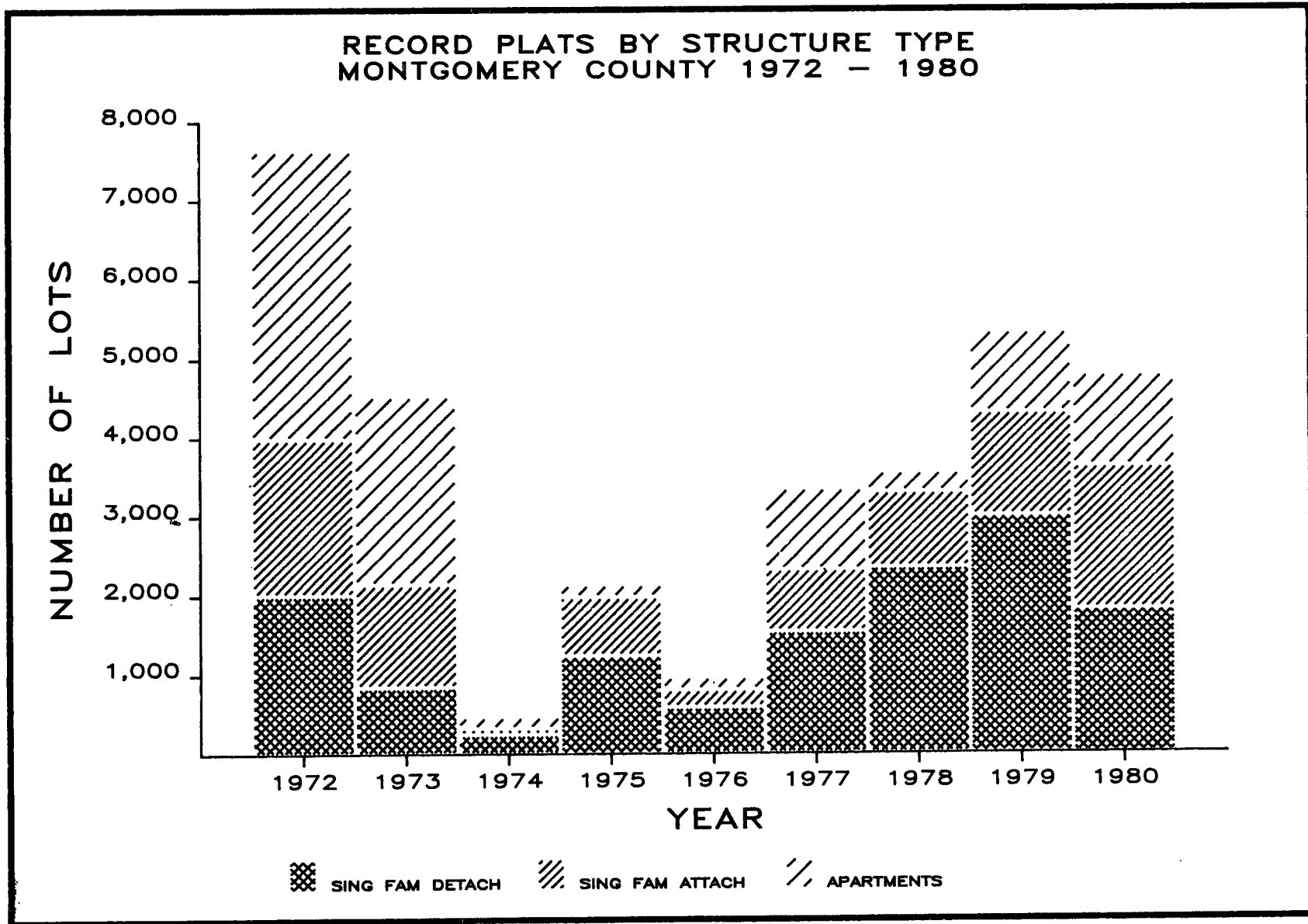
APPROVED PRELIMINARY SUBDIVISION PLANS, BY STRUCTURE TYPE
MONTGOMERY COUNTY
(Number of Lots)
1972-1980

Period	SF Detached		SF Attached		Apartments		Total	
	Number	Percent	Number	Percent	Number	Percent	Number	Percent
Jan.-Dec. 1972	3,882	37.1	1,934	18.5	4,639	44.4	10,455	100.0
Jan.-Dec. 1973	1,089	30.3	600	16.7	1,908	53.0	3,597	100.0
Jan.-Dec. 1974	741	23.7	1,444	46.2	942	30.1	3,127	100.0
Jan.-Dec. 1975	705	14.4	2,700	55.1	1,492	30.5	4,897	100.0
Jan.-Dec. 1976	3,593	37.4	2,315	24.1	3,689	38.4	9,597	100.0
Jan.-Dec. 1977	3,735	67.2	1,611	29.0	208	3.7	5,554	100.0
Jan.-Dec. 1978	6,575	62.7	2,821	26.9	1,093	10.4	10,489	100.0
Jan.-Dec. 1979	4,679	70.1	1,582	23.7	418	6.3	6,679	100.0
Jan.-Dec. 1980	6,019	47.3	5,792	45.5	909	7.2	12,720	100.0
TOTAL-Jan. 1972- Dec. 1980	31,018	46.2	20,799	31.0	15,298	22.8	67,115	100.0

SOURCE: Research Division, MCPB.

NOTES: Does not include preliminary plans from the incorporated cities of Gaithersburg and Rockville.

CHART 3



SOURCE: M-NCPPC Special Projects Division

TABLE 13

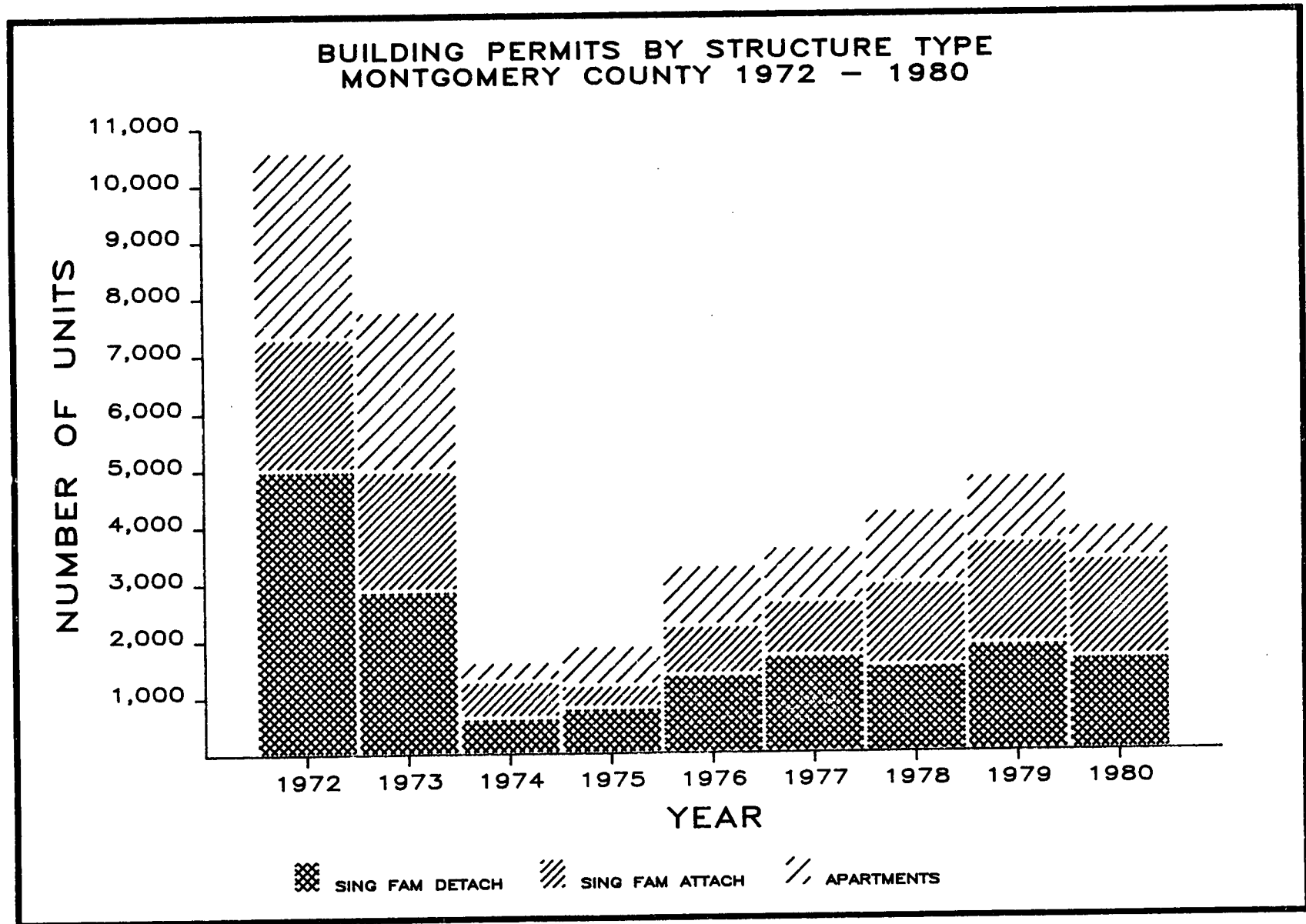
RECORDED PLATS, BY STRUCTURE TYPE
MONTGOMERY COUNTY
(Number of Lots)
1972-1980

Period	SF Detached		SF Attached		Apartments		Total	
	Number	Percent	Number	Percent	Number	Percent	Number	Percent
Jan.-Dec. 1972	2,013	26.4	1,973	25.8	3,647	47.8	7,633	100.0
Jan.-Dec. 1973	849	18.7	1,295	28.5	2,399	52.8	4,543	100.0
Jan.-Dec. 1974	250	52.7	77	16.2	147	31.0	474	100.0
Jan.-Dec. 1975	1,240	58.2	739	34.7	153	7.2	2,132	100.0
Jan.-Dec. 1976	590	61.3	216	22.5	156	16.2	962	100.0
Jan.-Dec. 1977	1,535	45.9	780	23.4	1,026	30.7	3,341	100.0
Jan.-Dec. 1978	2,347	66.0	955	26.9	252	7.1	3,554	100.0
Jan.-Dec. 1979	3,001	56.3	1,312	24.6	1,018	19.1	5,331	100.0
Jan.-Dec. 1980	1,812	37.8	1,814	37.9	1,163	24.3	4,789	100.0
TOTAL-Jan. 1972- Dec. 1980	13,637	41.6	9,161	28.0	9,961	30.4	32,759	100.0

SOURCE: Research Division, MCPB.

NOTES: Does not include plats from the incorporated cities of Gaithersburg and Rockville.

CHART 4



SOURCE: M-NCPPC Special Projects Division

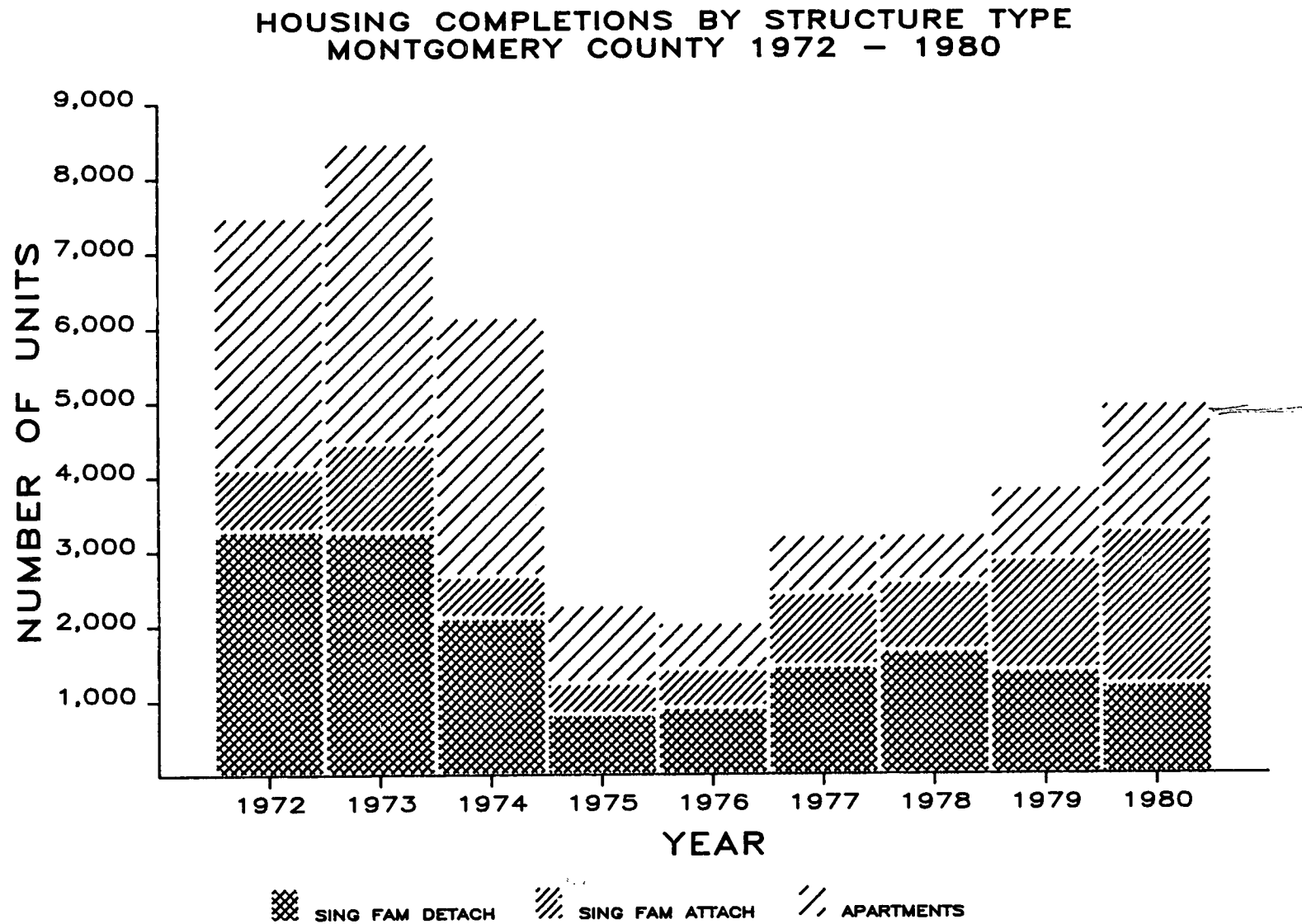
TABLE 14

BUILDING PERMITS, BY STRUCTURE TYPE
MONTGOMERY COUNTY
1972-1980

Period	SF Detached		SF Attached		Apartments		Total	
	Number	Percent	Number	Percent	Number	Percent	Number	Percent
Jan.-Dec. 1972	5,013	47.3	2,299	21.7	3,293	31.1	10,605	100.0
Jan.-Dec. 1973	2,888	37.1	2,111	27.1	2,792	35.8	7,791	100.0
Jan.-Dec. 1974	639	39.2	641	39.3	349	21.4	1,629	100.0
Jan.-Dec. 1975	806	42.3	393	20.6	705	37.0	1,904	100.0
Jan.-Dec. 1976	1,373	41.6	861	26.1	1,066	32.3	3,300	100.0
Jan.-Dec. 1977	1,713	47.4	953	26.3	950	26.3	3,616	100.0
Jan.-Dec. 1978	1,523	35.8	1,456	34.2	1,276	30.0	4,255	100.0
Jan.-Dec. 1979	1,899	39.1	1,796	37.0	1,162	23.9	4,857	100.0
Jan.-Dec. 1980	1,649	41.6	1,722	43.5	589	14.9	3,960	100.0
TOTAL-Jan. 1972- Dec. 1980	17,503	41.8	12,232	29.2	12,182	29.1	41,917	100.0

SOURCE: Compiled by Research Staff of MCPB from data supplied by Montgomery County Department of Environmental Protection and the incorporated cities of Gaithersburg and Rockville.

CHART 5



SOURCE: M-NCPPC Special Projects Division

TABLE 15

HOUSING COMPLETIONS, BY STRUCTURE TYPE
MONTGOMERY COUNTY
1972-1980

Period	SF Detached		SF Attached		Apartments		Total	
	Number	Percent	Number	Percent	Number	Percent	Number	Percent
Jan.-Dec. 1972	3,289	43.9	830	11.1	3,365	45.0	7,484	100.0
Jan.-Dec. 1973	3,265	38.6	1,179	13.9	4,024	47.5	8,468	100.0
Jan.-Dec. 1974	2,113	34.3	554	9.0	3,489	56.7	6,156	100.0
Jan.-Dec. 1975	822	36.0	411	18.0	1,048	45.9	2,281	100.0
Jan.-Dec. 1976	909	44.5	508	24.9	625	30.6	2,042	100.0
Jan.-Dec. 1977	1,454	45.2	976	30.4	783	24.4	3,213	100.0
Jan.-Dec. 1978	1,664	51.6	920	28.5	640	19.8	3,224	100.0
Jan.-Dec. 1979	1,399	36.3	1,489	38.6	967	25.1	3,855	100.0
Jan.-Dec. 1980	1,207	24.2	2,073	41.6	1,698	34.1	4,978	100.0
TOTAL-Jan. 1972- Dec. 1980	16,122	38.7	8,940	21.4	16,639	39.9	41,701	100.0

SOURCE: Compiled by MCPB from records of the Supervisor of Assessments, State of Maryland.

TABLE 16
HOUSING UNIT DEMOLITIONS, BY STRUCTURE TYPE
MONTGOMERY COUNTY
1972-1980

Period	SF Detached		Apartments		Total	
	Number	Percent	Number	Percent	Number	Percent
Jan.-Dec. 1972	84	100.0	-	-	84	100.0
Jan.-Dec. 1973	77	63.6	44	36.4	121	100.0
Jan.-Dec. 1974	63	43.1	83	56.8	146	100.0
Jan.-Dec. 1975	48	57.8	35	42.2	83	100.0
Jan.-Dec. 1976	54	100.0	-	-	54	100.0
Jan.-Dec. 1977	23	53.5	20	46.5	43	100.0
Jan.-Dec. 1978	33	100.0	-	-	33	100.0
Jan.-Dec. 1979	22	100.0	-	-	22	100.0
Jan.-Dec. 1980	23	100.0	-	-	23	100.0
TOTAL Jan. 1972- Dec. 1980	427	70.1	182	29.9	609	100.0

SOURCE: Compiled by Research Staff of MCPB from data supplied by the Department of Environmental Protection, Montgomery County.

General Characteristics of Montgomery County's Residential Zoning Supply--Density, Structure Type, and Sewerage Service Categories

Based upon existing zoning, the total dwelling unit potential of vacant and redevelopable residential land in Montgomery County is 174,000 units. If all of this supply were used, there would be a 84 percent increase over the current housing stock of 208,000 units. This zoning supply includes large amounts of capacity for all the major residential housing types (single family detached, townhouses, garden, mid-rise, and high-rise units) and densities (from 1 unit for 25 acres to 100 units per acre). Using the new High (the previous Intermediate) forecast rate of 4,000 units per year, it would appear that the total magnitude of the supply is sufficient for many decades of development.

While it may seem reasonable to conclude that the overall supply is adequate because the magnitude is relatively large, it is necessary to study the components of the capacity in detail before a valid assessment can be made. The "adequacy" issue is complicated since the supply can be evaluated from several standpoints, depending upon one's perspective. For example, location, structure type, density, and ownership are all factors which can be used to judge the adequacy of the vacant land supply. Further, we have searched the literature and questioned the experts but have not found a generally accepted standard for determining the correct ratio of land supply to market demand so as to provide sufficient market flexibility to avoid excessive land prices.

Land Within The Sewerage Service Envelope

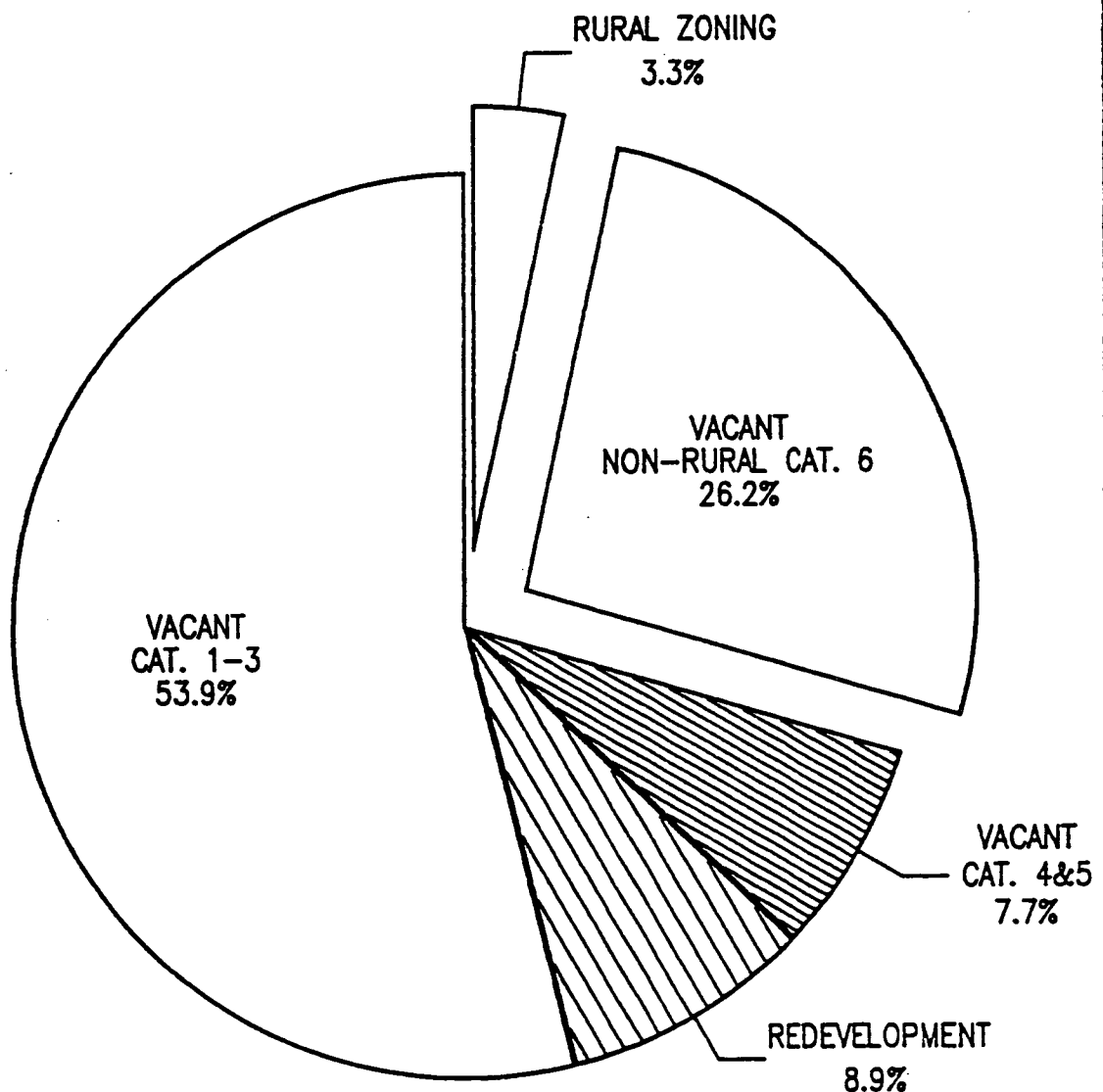
The potential availability of land for development is related to whether or not community sewerage service is planned for the land and if the land is vacant or requires redevelopment. Land assigned sewerage service categories 1-5 is considered to be "within the sewerage service envelope." Land in categories 1-3 is especially important since the owners may apply for a preliminary subdivision plan and/or a sewer service authorization. Chart 1 shows that of the total residential zoning supply, 70 percent is within the current adopted sewerage service envelope. Redevelopment potential makes up 9 percent of the County's total residential dwelling unit supply, and 15 percent of the capacity within the sewerage service envelope. The redevelopment potential represents an estimate of the probable ultimate residential redevelopment yield for the County's Transit Station and CBD areas. The sum of the redevelopment capacity for all of these areas is approximately 15,600 units. This redevelopment capacity is primarily designed for high-rise and mid-rise units. Unfortunately, it is expected that only a small amount of this redevelopment capacity will be used by the construction industry over the next 10 years. The trend toward high interest rates and high construction costs have depressed the apartment market in general. When these factors are combined with the costs of redevelopment, it appears reasonable to speculate that no more than a few thousand units will be constructed on redeveloped land during the next decade. Therefore, in a practical sense, it is misleading to place equal emphasis on the redevelopment potential with the other major supply categories in Chart 6.

Vacant land in service categories 4 and 5 (12,400 unit potential) will also play a relatively minor role in the County's 10-year development horizon. However, such land is programmed for sewerage service and will become important in the following decade. Zoning capacity outside the sewerage service envelope (51,800 unit potential) can be divided between rural and vacant non-rural. The rural or wedge areas are encouraged to remain in farming and very low density residential and open space and not develop at

CHART 6 PROPORTIONAL DISTRIBUTION OF RESIDENTIAL DWELLING UNIT ZONING CAPACITY

Vacant within the Sewer Envelope (cat. 1-5), Redevelopment,
Non-Rural outside the Sewer Envelope (cat. 6),
and Rural Zoning (total capacity = 175,000 units)

Montgomery County



SOURCE: M-NCPPC Special Projects Division

urban/suburban densities. The new High forecast pace for non-rural zoned land outside the sewerage service envelope is expected to be less than 400 units per year if past patterns continue (see Table 17). Therefore, this land will only contribute between 5 and 10 percent of the County's total residential construction during the next 10 years. However, some percentage of the vacant land presently outside the sewerage service envelope, but having a higher density than rural zoning, is expected to be included in the envelope when planning conditions are appropriate. Thus, part of this land is reserved for future development. The non-rural zoned land which is outside the sewerage service envelope is mostly planned for large and medium sized lots with R-200 zoning comprising 75 percent of this non-rural zoning total of 46,000 units.

Vacant land within service categories 1-3 should be the focus of any attempt to evaluate the adequacy of the supply of residential land available for development. The dwelling unit potential within categories 1-3 is 94,300 units. Table 18 shows that the vast majority of Montgomery County's higher density zoning (small lot and higher densities) supply is within sewerage service categories 1-3. These higher densities are more appropriate for middle, moderate, and lower cost housing than the large lot and medium lot densities.

Chart 8 shows the Countywide proportional distribution of vacant dwelling unit supply within service categories 1-3. Table 18 lists the supply for all service categories. The majority of this dwelling unit potential is in the small lot and garden apartment zoning groups. However, a significant proportion of the small lot and garden apartment capacity is in the non-euclidian "planned community" zones which include TS (Town Sector), PD (Planned Development), PRC (Planned Retirement Community), and PN (Planned Neighborhood). Land in the zones just mentioned generally develop as townhouses and small lot detached homes, and to a lesser extent, as garden apartments. Land within the planned community zones is likely to be controlled by large developers since these zones are designed for larger parcels of land and are less likely to be available for development by small builders than the euclidian small lot and garden apartment zones such as R-90, R-60, R-30, and R-20 and the non-euclidian RT (townhouse) zones. The PRC is especially unique in that only one such project exists in Montgomery County, and the housing is generally restricted to one age group. It comprises a significant share of the vacant residential land in the highly developed Suburban Corridor of Montgomery County (see Map 1).

Chart 9 compares shares of dwelling unit capacity and acres zoned by structure type within sewerage service categories 1-3. Although a 62 percent share of the residential zoning capacity is in the small lot and garden apartment zones, the share of vacant land which is associated with these zones is only 34 percent of the total. It should be expected that the proportion of the land area associated with these zones is less than the dwelling unit potential since the small lot and garden apartment zones allow more dwelling units per acre than the large and medium lot zones. For the combined large and medium lot zoning groups, we find that they comprise 23 percent of the dwelling unit capacity, but 65 percent of the total vacant residential acres.

Chart 10 compares the percent distribution of vacant residential land within sewerage service categories 1-3 with existing development by structure type. The chart shows that there is a much larger percentage of existing Montgomery County development in the small lot categories (53 percent) than the percentage of small lot zoning in the vacant land supply (33 percent). However, the proportion which is zoned for garden

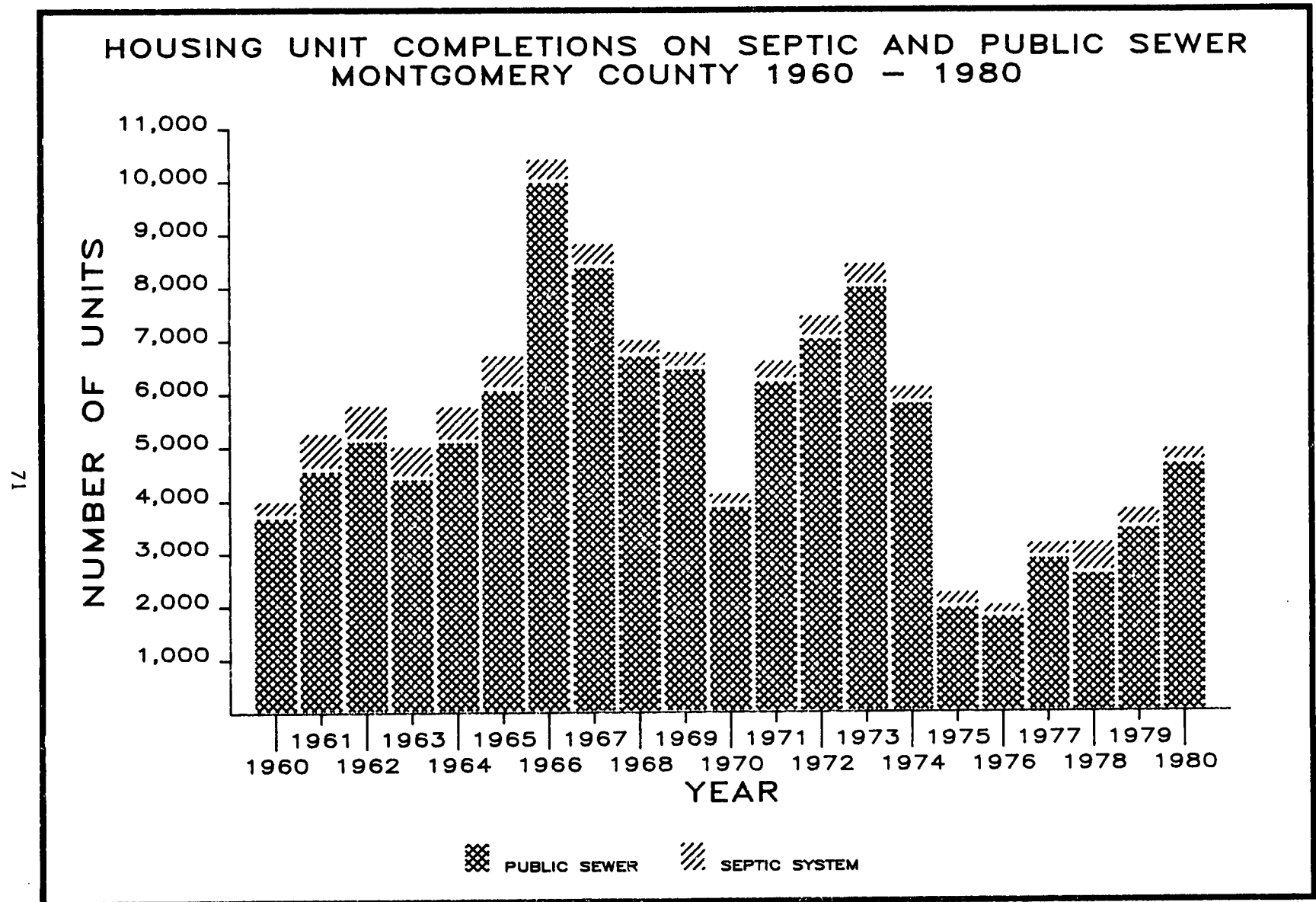
apartments (29 percent) is actually greater than the proportion of existing residential development which is in the garden apartment category (16 percent). There are historical reasons for both of these proportional imbalances. Up until the 1950's essentially all of Montgomery County was zoned for small lots. Therefore, most of the development which occurred up to this time was on small lots. This development still makes up a large share of the existing dwelling units today. Garden apartment construction only became numerically significant in the 1960's when garden apartment zoning was increased. Most of the County's garden apartments were built after 1960.

TABLE 17
HOUSING UNIT COMPLETIONS ON SEPTIC AND SEWER SERVICE SYSTEM
MONTGOMERY COUNTY
1960-1980

Year	Septic System	Sewer Service	Total Units Constructed	% of Total Units Constructed On Septic System
1960	321	3,712	4,033	7.9
1961	708	4,581	5,289	13.4
1962	669	5,144	5,813	11.5
1963	605	4,437	5,042	12.0
1964	672	5,120	5,792	11.6
1965	654	6,097	6,751	9.7
1966	437	10,008	10,445	4.2
1967	456	8,398	8,854	5.1
1968	316	6,730	7,046	4.5
1969	324	6,482	6,806	4.7
1970	262	3,900	4,162	6.3
1971	396	6,244	6,640	5.9
1972	427	7,057	7,484	5.7
1973	439	8,029	8,468	5.2
1974	317	5,839	6,156	5.1
1975	295	1,986	2,281	12.9
1976	229	1,813	2,042	11.2
1977	301	2,912	3,213	9.4
1978	604	2,620	3,224	18.7
1979	370	3,485	3,855	9.6
1980	287	4,691	4,978	5.8
<hr/>				
TOTAL- 1960-80	9,089	109,285	118,374	7.7

SOURCE: Compiled by Research Staff of MCPB from data supplied by the Department of Environmental Protection, Montgomery County.

CHART 7



SOURCE: M-NCPPC Special Projects Division

TABLE 17A
POPULATION AND HOUSEHOLDS
1960-1980
MONTGOMERY COUNTY, MARYLAND

Year	Population	Household*	Change From Previous Year	
			Populations	Households
1960	340,928	92,433	-	-
1961	353,400	96,300	12,472	3,867
1962	369,500	101,500	16,100	5,200
1963	386,900	107,100	17,400	5,600
1964	402,000	112,000	15,100	4,900
1965	418,900	117,600	16,900	5,600
1966	438,200	124,200	19,300	6,600
1967	466,300	134,300	28,100	10,100
1968	489,900	142,900	23,600	8,600
1969	508,200	149,700	18,300	6,800
1970	522,809	156,674	14,609	6,974
1971	530,900	161,100	8,091	4,426
1972	544,900	168,100	14,000	7,000
1973	561,100	176,000	16,200	7,900
1974	579,600	185,000	18,500	9,000
1975	589,400	191,400	9,800	6,400
1976	585,800	193,600	-3,600	2,200
1977	581,100	195,600	-4,700	2,000
1978	579,100	198,800	-2,000	3,200
1979	578,300	202,000	-800	3,200
1980	579,053	207,195	753	5,195

* Occupied housing units.

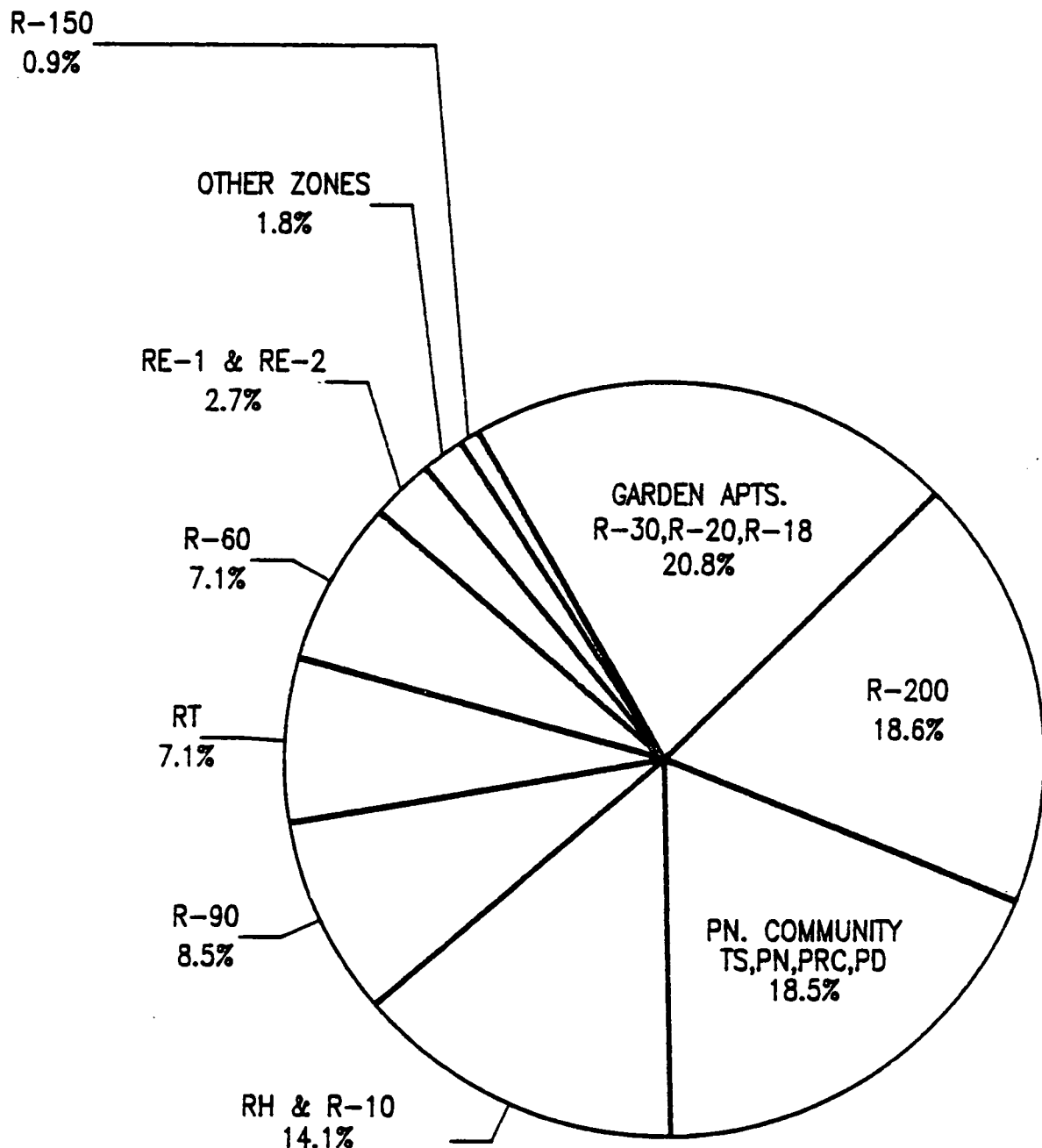
Sources: 1960, 1970 and 1980 are April estimates from the U.S. Census of Population and Housing. All other population and household estimates are January estimates by the MCPB staff (Special Projects Division).

CHART 8 PROPORTIONAL DISTRIBUTION OF VACANT DWELLING

UNIT ZONING CAPACITY BY ZONE

(Sewerage Service Categories 1-3)

Montgomery County



SOURCE: M-NCPPC Special Projects Division

CHART 9 COMPARISON OF PERCENT SHARE OF VACANT RESIDENTIAL ZONING CAPACITY
IN ACRES AND POTENTIAL DWELLING UNITS (SEWERAGE SERVICE CATEGORIES 1-3)
(Total Residential Acres in Categories 1-3 = 25,900)
Montgomery County

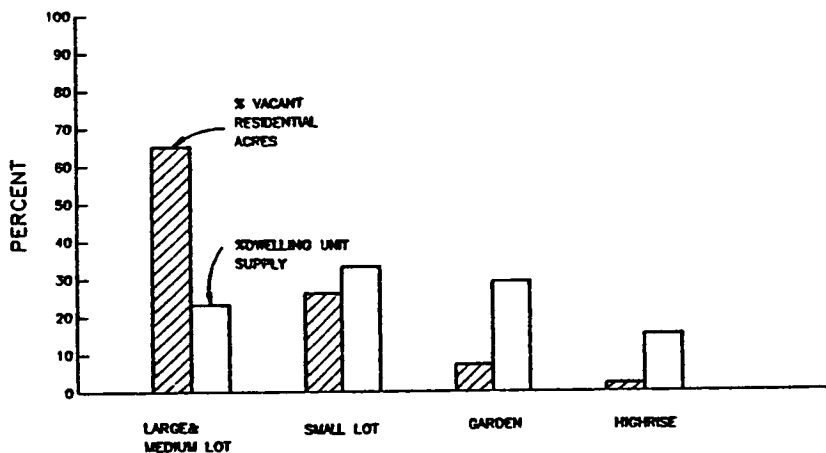
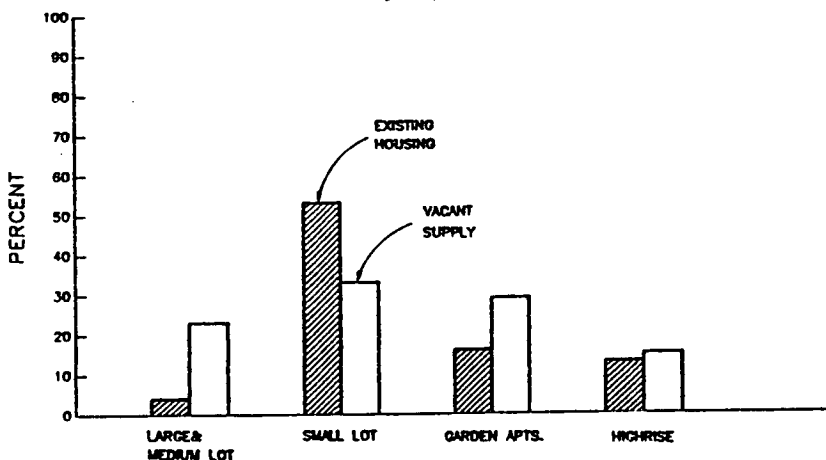


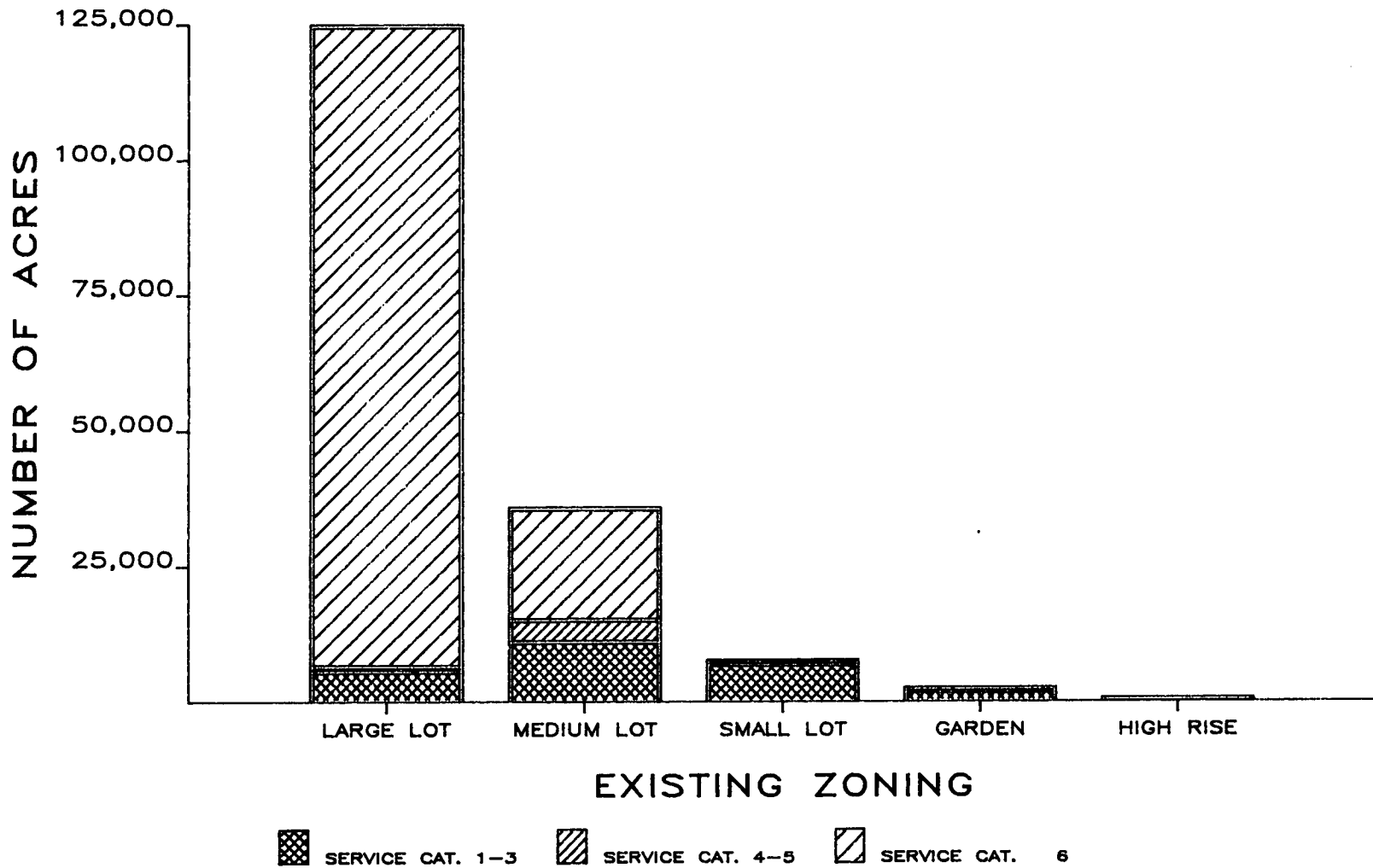
CHART 10 PERCENT DISTRIBUTION OF VACANT RESIDENTIAL DWELLING UNIT ZONING SUPPLY
(SEWERAGE SERVICE CATEGORIES 1-3) VS. DISTRIBUTION OF EXISTING DEVELOPMENT
Montgomery County



SOURCE: M-NCPPC Special Projects Division

CHART 11

ACREAGE OF VACANT LAND BY SEWERAGE SERVICE CATEGORY MONTGOMERY COUNTY 1980



SOURCE: M-NCPPC Special Projects Division

TABLE 18
ACRES OF VACANT LAND
BY SEWER CATEGORY 1980

Generalized Existing Zoning	Sewerage Service Category			Total
	1 - 3	4 & 5	6	
Large Lot ¹	5,500	900	118,300	124,700
Medium Lot ²	11,000	4,100	20,500	35,600
Small Lot ³	6,800	500	100	7,400
Garden ⁴	1,900	400	0	2,300
High Rise ⁵	400	0	0	400
Total Residential	25,600	5,900	138,900	170,400
Commercial ⁶	950	40	90	1,080
Industrial ⁶	2,000	430	1,090	3,520
Total Non-Residential	2,950	470	1,180	4,600

¹ Includes RDTZ, Rural, RE-2, RE-1.

² RA, R-200, R-150, TRDZ, TRD-1, TRD-2, RMHZ.

³ R-90, R-60, RT, TS, PN, PRC, RMH and a portion of PD-9, PD-13, PD-15.

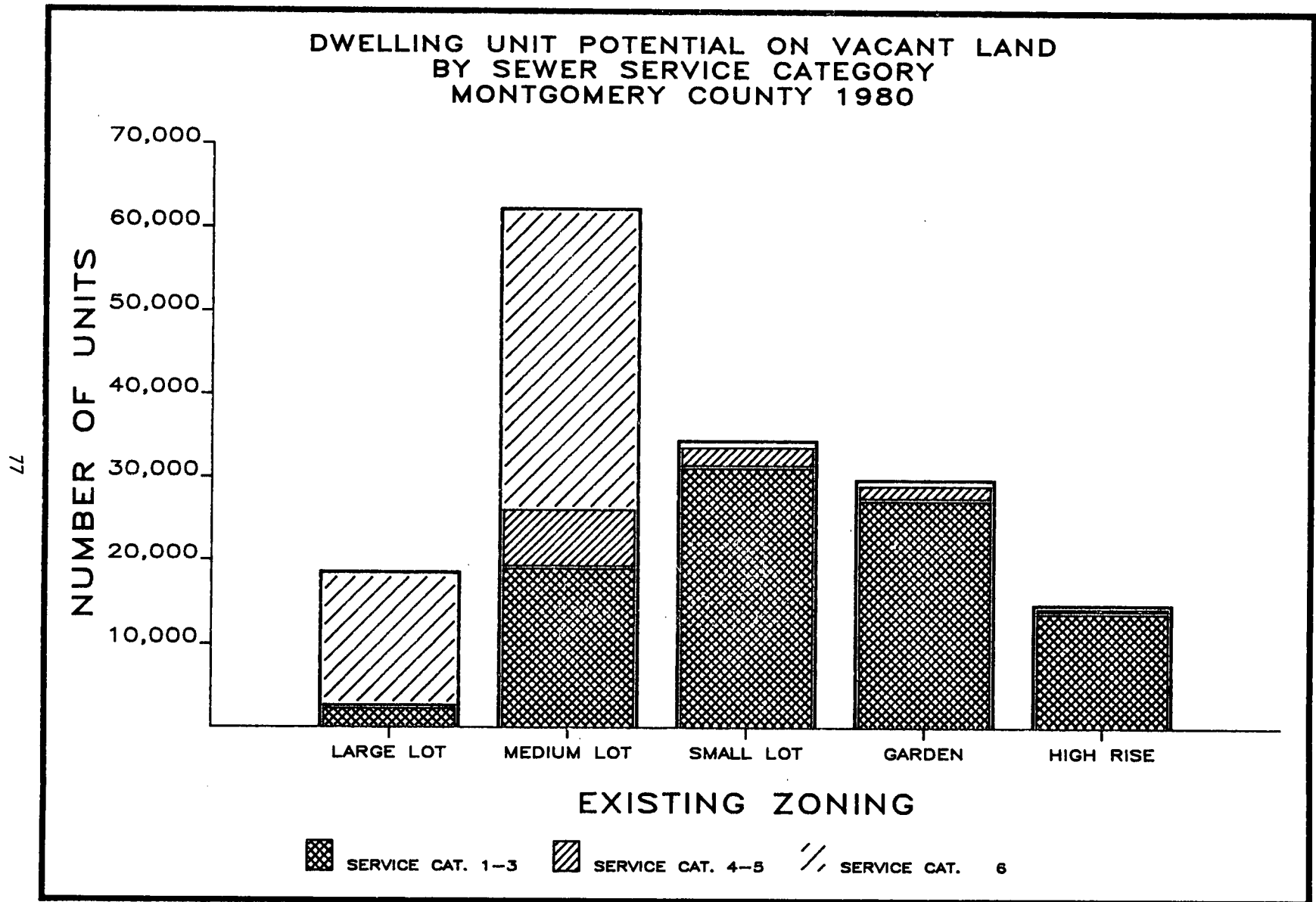
⁴ R-30, R-20, R-18, TS, PN, PRC, and a portion of PD-9, PD-13, PD-15.

⁵ RH, R-10.

⁶ Includes redevelopable parcel; where land value exceeds improved value.

Source: Montgomery County Planning Board and Special Projects Division.

CHART 12



SOURCE: M-NCPPC Special Projects Division

TABLE 19

DWELLING UNIT POTENTIAL ON VACANT LAND
BY SEWERAGE SERVICE CATEGORY

Generalized Existing Zoning	Sewerage Service Category			Total
	1 - 3	4 & 5	6	
Large Lot ¹	2,500	400	15,400	18,300
Medium Lot ²	19,200	7,100	35,700	62,000
Small Lot ³	31,300	2,500	400	34,200
Garden ⁴	27,400	1,800	300	29,500
High Rise ⁵	13,900	600	0	14,500
Total	94,300 ⁶	12,400	51,800	158,500

¹ Includes RDTZ, Rural, RE-2, RE-1.

² RA, R-200, R-150, TRDZ, TRD-1, TRD-2, RMHZ.

³ R-90, R-60, RT, TS, PN, PRC, RMH and a portion of PD-9, PD-13, PD-15.

⁴ R-30, R-20, R-18, TS, PN, PRC, and a portion of PD-9, PD-13, PD-15.

⁵ RH, R-10.

⁶ Another 15,600 units are possible through redevelopment primarily in the Central Business Districts.

Source: Montgomery County Planning Board and Special Projects Division.

IV STAGING

COMPREHENSIVE
PLANNING
POLICIES

GUIDELINES FOR ADMINISTRATION OF THE ADEQUATE PUBLIC FACILITIES ORDINANCE

Introduction

The Montgomery County Subdivision Ordinance authorizes the Planning Board to review all preliminary plans of subdivision for adequacy of programmed public facilities; and to reject any that do not conform to this provisions of the ordinance. The following guidelines describe the methods and criteria which the Planning Board and its staff will use in administering this activity. These guidelines supersede all previous ones issued by the Board.

In developing the guidelines outlined herein, the Planning Board has made a preliminary determination that, generally, the existing and programmed facilities, for police stations, fire stations, health clinics and schools, are adequate for the development thresholds outlined below. Similarly, there are no special sewer or water capacity constraints, to undercut the service envelopes contained in the current adopted Ten Year Water and Sewerage Plan, which envelopes have been evaluated and judged consistent with the thresholds outlined below.

In the absence of evidence to indicate a capacity constraint in any of these facilities, below the thresholds shown herein, transportation has been found to be the most constraining facility at the present time, and the guidelines have been developed under a methodology that balances development against this constraint. Should other facility elements develop capacity problems, these guidelines will be amended accordingly after proper study, public notice and public hearings.

Procedures

Within the statutory guidelines for processing preliminary subdivision plans, the following process will be followed. Applications which meet the submission requirements of the Ordinance will be presented by planning department staff as soon as possible to a meeting of the Subdivision Review Committee. This Committee is composed of staff members representing the various relevant departments and agencies of government. Commentary will be requested from these agencies concerning the preliminary plan application. Planning department staff will incorporate these comments into its own review, and prepare a comprehensive staff recommendation. This recommendation then will be placed on the next available regular Planning Board agenda for action by the Board, in accordance with the Board's Rules of Procedure governing subdivision applications.

Criteria

In this document, the County has been divided into a number of policy areas. Each policy area has been assigned a threshold number for both housing and employment, beyond which it is estimated that the capacity of some or all of the available public

¹ § 50-35K Montgomery County Code.

facilities will have been exceeded. These thresholds are based on a comprehensive evaluation of the combined ability of all the existing and programmed public facilities. In general, these existing and programmed facilities will adequately serve the level of development represented by the threshold numbers. Reflected in these thresholds is an evaluation of the unique characteristics of each policy area, with respect to such elements as relative degrees of transit service, through traffic, etc. From time to time, these thresholds will be amended by the Planning Board, after public hearing, to reflect changing conditions such as additions to the Capital Improvements Program, changing patterns of public facility usage, revised levels of public service, etc.

Threshold Interpretation

Planning staff will maintain records of: (1) the total amount of development that actually exists in each policy area, expressed in terms of dwelling units and employees; and (2) the amount that would be added to this if all outstanding preliminary plans, which have been approved by the Planning Board and which also have received sewer authorization approval from the Washington Suburban Sanitary Commission, were also in place. This total will be used as a base, to which will be added, during staff evaluation, the amount of development that would be generated by each new preliminary plan application. If the combined total does not exceed the threshold of the Comprehensive Staging Policy Guideline, the application will be given a presumption that it meets the adequate public facilities test.

In cases where the planning staff believes that, notwithstanding this presumption, there may be created a serious local public facility overload, staff shall undertake a more detailed local area review. If the result of this review is to demonstrate that there will indeed result a serious local problem, which cannot be resolved within the context of the existing public facility network and the adopted Capital Improvements Program, staff shall recommend denial of the project to the Planning Board. Applicants will be advised if such a local review is undertaken, and will be required, if necessary, to provide additional analytical background, such as traffic studies, to assist staff to complete this analysis within the statutory timeframe.

Threshold Flexibility

In some cases it may be in the public interest for the Board to grant approval to a preliminary plan application that exceeds the threshold. In general, such approval will be conditioned upon the future construction, by either the applicant and/or the government, of some public facility projects which, if added to the approved Capital Improvements Program as a programmed facility, will result in the subdivision meeting the adequacy tests of local area review. Usually, the nature and design of the additional project will need to receive prior approval from the planning staff, and from the relevant governmental agency responsible for constructing and maintaining such facilities.

In cases where the applicant agrees to pay for the facility, there will normally be no limit on the size or extent of the project, subject to its being in accordance with an adopted Master Plan or other relevant policy statement. In cases where the approval is conditioned on the government adding some facility projects to the Capital Improvements Program, the Board and staff will be guided by such judgements as: how probable the addition of such projects may be; how large and expensive the projects are; how long they may take to implement; and other similar considerations. In general, this latter type of conditional approval will be limited to situations in which the additional public facility projects are relatively small and easily achieved.

Specific Standards

To better interpret the general provisions described in the Adequate Public Facilities Ordinance itself, the following administrative standards will be observed.

(1) Capital Improvements Program Definition

A public facility project is considered "programmed," and thus counted as available public facility capacity, if it is scheduled for at least 50 percent of its total construction cost to be expended within the six-year period of the adopted C.I.P.

(2) Roads, Street Access and Public Transportation

In those policy areas which have not been assigned a specific threshold figure, applications will be reviewed under a transportation standard of not exceeding level of service D at the nearest critical intersection, as per Section 4 of the Local Area Transportation Review Guidelines.

In those policy areas which have been assigned a specific threshold figure, no local area review will be undertaken if the total development, as defined above, does not exceed the threshold, and if the subdivision application generates less than 50 vehicles trips during peak hours. If the application generates more than 50 peak hour trips, it will be evaluated under a² separate set of criteria, called Guidelines for Local Area Transportation Review.² The basic procedural elements of these guidelines are shown in the attached diagram.

(3) Sewerage and Water Service

In accordance with the language of the Adequate Public Facilities Ordinance itself, in both policy areas with a threshold and those without one, applications will be considered adequately served by sewerage and water, if the subdivision is located in an area in which water and sewer service is presently available, under construction, is designated by the County Council for extension of service within the first two years of a current approved Ten Year Water and Sewerage Plan; or, if the applicant either provides a community water and/or sewerage system, or meets health requirements for septic and/or well system, as outlined in the Adequate Public Facilities Ordinance. These requirements are determined either by reference to the Council adopted Ten Year Water and Sewerage Plan, or by obtaining a satisfactory percolation test from the County Health Department. Applications will only be accepted, for further planning staff and Board consideration, if they present evidence of meeting the appropriate requirement.

²

See Local Area Transportation Review following this section.

(4) General Health, Safety and Welfare

If an application does not generate development such as to exceed a threshold, or if it is located in a policy area where no threshold has been designated, planning staff will consider the programmed services to be adequate, for facilities such as police stations, firehouses, health clinics and schools, unless there is evidence to believe that a local area problem will be generated. Such a problem is one which cannot be overcome within the context of the adopted Capital Improvements Program and Operating Budgets of the relevant agencies. Where such evidence exists, either through agency response to the Subdivision Review Committee clearinghouse, or through public commentary or planning staff consideration, a local area review shall be undertaken. Such review shall seek a written opinion from the relevant agency, and will require, if necessary, additional data from the applicant, in order to facilitate the completion of the planning staff recommendation within the statutory time frame for Planning Board action.

(5) General Policy Considerations

In cases where the application generates development in excess of the threshold, and the planning staff and/or Board are willing to consider a possible approval conditioned upon some future additions to the Capital Improvements Program, the planning staff may undertake special studies to assist in making such a judgement, involving such aspects as fiscal impact, housing price, unique character, etc. In such cases, staff will require, if necessary, additional data from the applicant in order to facilitate the evaluation.

Revision Process

These Administrative Guidelines will remain in effect until amended, after public hearing, by a formal vote of the Planning Board. To assist general public understanding of the methodologies and criteria used in this process, the Board will appoint, during the first year, an ad hoc Technical Advisory Committee (TAC) at the same time it adopts the thresholds outline below. The TAC will be composed of County citizens representative of a broad spectrum of County interests, together with ex-officio members from appropriate County and State agencies. The committee will be asked to attend a series of briefing sessions in early 1982, and reconvene in early summer to consider possible revisions to the thresholds, resulting from changes in the adopted C.I.P. or other factors. During this latter period, the committee will review material developed by Planning Board staff, dealing with revised threshold calculations, pursuant to Council actions on Capital Improvements Programs in May. The committee will be invited to share its comments and ideas with the Planning Board, prior to the Board approving an amended version of this document for general release to the public in the Fall of 1982, and, after public hearing, final adoption.

DEFINITIONS

POTENTIAL FURTHER TRANSPORTATION IMPROVEMENTS

Facilities which if included as Programmed Facilities have the potential of increasing the development threshold while maintaining an acceptable level of service.

The list of candidate improvements are not necessarily complete. Alternative improvements or other independent projects, as yet undefined, also may be capable of adding transportation capacity.

LOCAL AREA REVIEW

A determination if the proposed development will produce excessive local detrimental impact beyond the capacity of existing and programmed public facilities. See detailed guidelines attached.

PROGRAMMED FACILITY

A capital facility project which is contained within the approved Six Year Capital Improvements Program of an appropriate agency, such that not less than half of the funds necessary for construction or operation are scheduled for expenditure within the six year time frame.

SEWER AUTHORIZATION/PIPELINE

An approval by the Washington Suburban Sanitary Commission to provide sewer service to a proposed development under certain conditions, primarily related to engineering standards and administrative fees. In monitoring those authorizations, planning staff will use the Sanitary Commission's files, with periodic updating. Sewer authorizations are an indication of the development pipeline. "Sewer Authorization Pipeline" refers to sewer authorizations plus completed development since 1977.

STAGING POLICY AREA

A geographic sub-area of the county, delineated by the Planning Board, for the purpose of staging analysis and the establishment of threshold capacities as appropriate.

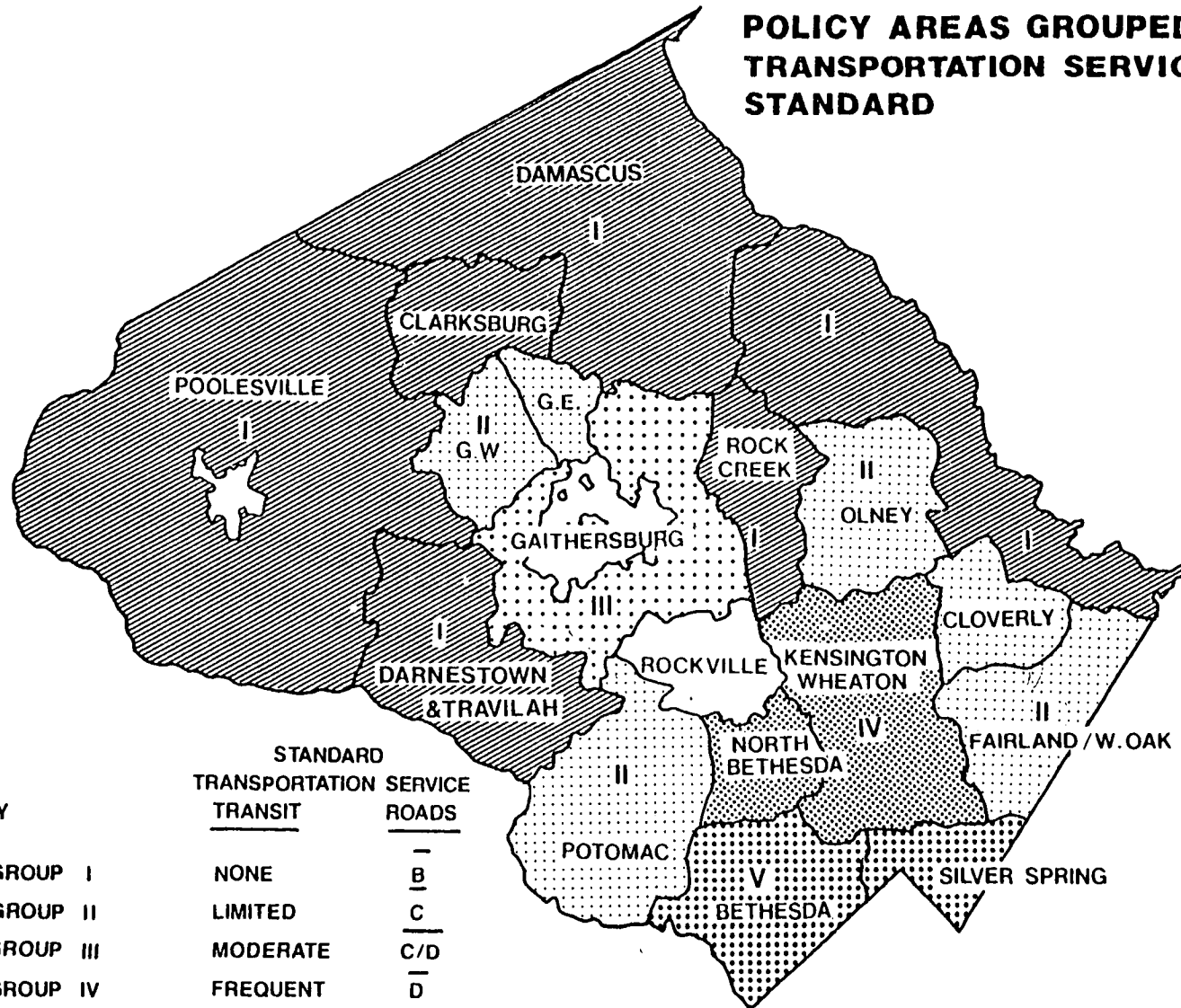
THRESHOLD

A total amount of development, expressed in terms of dwelling units and/or employees, that has been determined by the Planning Board to be balanced appropriately, on the basis of an area wide average, with the existing and programmed facilities for the area.

Dwelling units include all types of units; single family detached, townhouses, garden apartments and high rises. Each dwelling unit is counted as one unit.

The number of employees produced by development is estimated on the basis of the floor area and intended use of the planned structures. Unless the development is unique in some manner, statistical averages are used for the four major land use categories; office (200 square foot per employee) retail (400 square foot per employee) industrial (450 square foot per employee), "other" (500 square foot per employee).

POLICY AREAS GROUPED BY TRANSPORTATION SERVICE STANDARD



KEY

	GROUP I
	GROUP II
	GROUP III
	GROUP IV
	GROUP V

STANDARD	TRANSPORTATION	SERVICE
	TRANSIT	ROADS
	NONE	—
	LIMITED	B
	MODERATE	C/D
	FREQUENT	D
	FULL SERVICE	D/E

SOURCE: M-NCPPC Special Projects Division

TABLE 20
1982 STAGING THRESHOLDS^{1/}
BASE YEAR 1977

Policy Area and Traffic Sheds	Residential ^{2/} Threshold		Employee ^{2/} Threshold	
<u>GROUP I POLICY AREAS</u>				
Rock Creek Damascus Poolesville Patuxent Clarksburg Travilah/Darnestown	Staging determined by level of service D at nearest intersection or for other policy consid- erations.			
	Previous Recom. Based Upon 1981-86 CIP	Stage 1 ^{3/} Proposed For MCPB Adoption 11/81	Previous Recom. Based Upon 1981-86 CIP	Stage 1 ^{3/} Proposed For MCPB Adoption 11/81
<u>GROUP II POLICY AREAS</u>				
Olney	2,000	4,500	2,000	3,000
Germantown West	3,000	3,000	1,000	1,000
Germantown East	300	1,000	1,300	3,500
Cloverly	300	500	0	500
Potomac	6,300	6,300	3,200	3,200
Fairland/White Oak	7,500	8,000	11,000	13,000
<u>GROUP III POLICY AREAS</u>				
Gaithersburg	14,000	16,000	30,000	35,000
<u>GROUP IV POLICY AREA</u>				
North Bethesda	4,500	5,000	26,000	27,000
Kensington/Wheaton	10,000	10,000	9,000	9,000
<u>GROUP V POLICY AREAS</u>				
Bethesda	5,000	5,000 ^{4/}	19,000	19,000 ^{4/}
Silver Spring/Takoma Park	8,000	8,000	18,000	18,000
COUNTY TOTAL	60,900	67,300	120,500	132,200

^{1/} Thresholds for 1982 are derived from the Capital Improvements Program approved in May 1981, and are expected to remain in force roughly between December 1981 and December 1982.

^{2/} Residential thresholds are measured in terms of numbers of dwelling units. Employee thresholds are measured in terms of number of jobs. Employment estimates are derived from submitted applications by Planning Board staff, based upon the proposed use and square footage of new structures.

^{3/} Stage 1 is the allowable number of employees and residential units above the 1977 base period as determined by the adequacy of (1) existing transportation facilities, plus (2) transportation projects which are programmed for 50% of construction in the current Montgomery County CIP and the Maryland Department of Transportation's Consolidated Six Year Transportation Program.

^{4/} The staging elements of the adopted Bethesda CBD Sector Plan are adopted as part of this Comprehensive Staging Policy and are incorporated herein by reference. The limitations of the Bethesda CBD Sector Plan take precedence over the threshold established for the Bethesda Policy Area in this document.

SOURCE: M-NCPPC Special Project Division.

TABLE 21
CURRENT NET REMAINING CAPACITY UNDER 1982 THRESHOLDS

	Residential			Employees		
	Completions ^{1/} Since 1977			Employees ^{1/} Since 1977		
	Proposed Dwelling Unit Threshold	Plus Out- standing Sewer Author.	Additional ^{2/} Units Permitted	Proposed Employees Threshold	Plus Out- standing Sewer Author.	Additional ^{2/} Employees Permitted
<u>GROUP II POLICY AREAS</u>						
Olney	4,500	1,913	2,587	3,000	2,386	614
Germantown West	3,000	9,947	0	1,000	5,430	0
Germantown East	1,000	2,677	0	3,500	2,871	629
Cloverly ^{3/}	500	1,657	0	500	11	489
Potomac ^{3/}	6,300	3,679	2,621	3,200	3,200	0
Fairland/White Oak	8,000	6,649	1,351	13,000	6,797	6,203
<u>GROUP III POLICY AREA</u>						
Gaithersburg	16,000	13,236	2,764	35,000	20,329	14,671
<u>GROUP IV POLICY AREAS</u>						
North Bethesda	5,000	2,963	2,037	27,000	20,076	6,924
Kensington/Wheaton	10,000	4,826	5,174	9,000	4,116	4,884
<u>GROUP V POLICY AREAS</u>						
Bethesda ^{4/}	5,000	2,928	2,072	19,000	8,994	10,006
Silver Spring/Takoma Park	8,000	801	7,199	18,000	2,664	15,336
TOTAL	67,300	51,276	25,805	132,200	76,874	56,300

^{1/} Completions through June 1981, sewer authorizations as of August 1981. This number will change monthly with sewer authorizations.

^{2/} Threshold minus completions since 1977 and outstanding sewer authorizations. Any or all of these numbers may be lower because of the effect of local area congestion review.

^{3/} Threshold equal with the zoning envelope.

^{4/} The Bethesda CBD Sector Plan supersedes the threshold established for the Bethesda Policy Area.

SOURCE: M-NCPPC Special Projects Division.

1981 CIP Report

TABLE 22

ROAD PROJECTS ADDED BY THE ADOPTED 1982-87 CIP
AND THE MdDOT/SHA CONSOLIDATED TRANSPORTATION PROGRAM

Policy Area	Roadway	State or County	Limits
<u>Olney</u>	Georgia Avenue	C	Norbeck Road to MD 108
<u>Germantown East</u>	Intersection Improvement	C	MD 355 (Frederick Avenue) at MD 118 (Germantown Road)
<u>Cloverly</u>	Intersection Improvement	C	New Hampshire Avenue at Notley Road, Good Hope Road, and Norwood Road
<u>Fairland/ White Oak</u>	U.S. Route 29	C	Industrial Parkway to Musgrove Road
	Subdivision Participation	C	New Hampshire Avenue at Lockwood Drive
<u>Gaithersburg</u>	I-270 Interchange	S	At MD 124 (West Diamond Avenue)
	MD 355 (Frederick Ave.)	S	South Summit Ave. to Chestnut St.
	Watkins Mill Rd. Bridge	C	At Wheatstone Run
	Key West Ave./MD 28	C	MD 28 (Darnestown Road) to Great Seneca Highway
<u>N. Bethesda</u>	Aspen Hill Road	C	Veirs Mill Road to Twinbrook Pkwy.

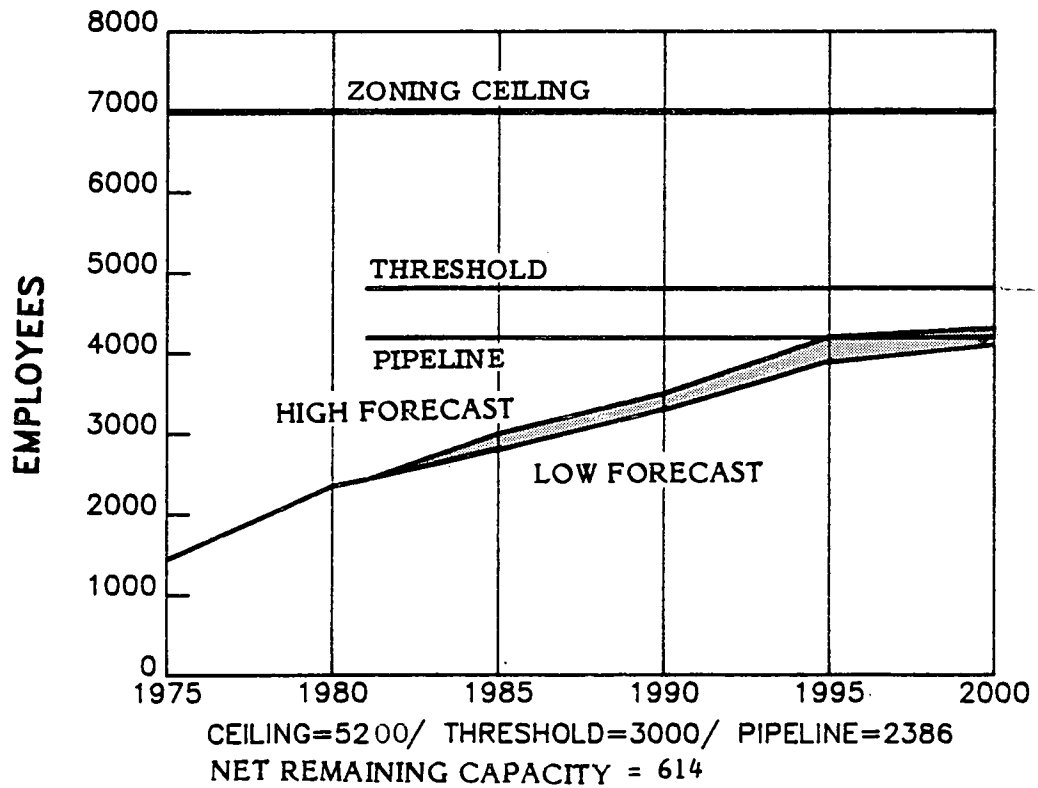
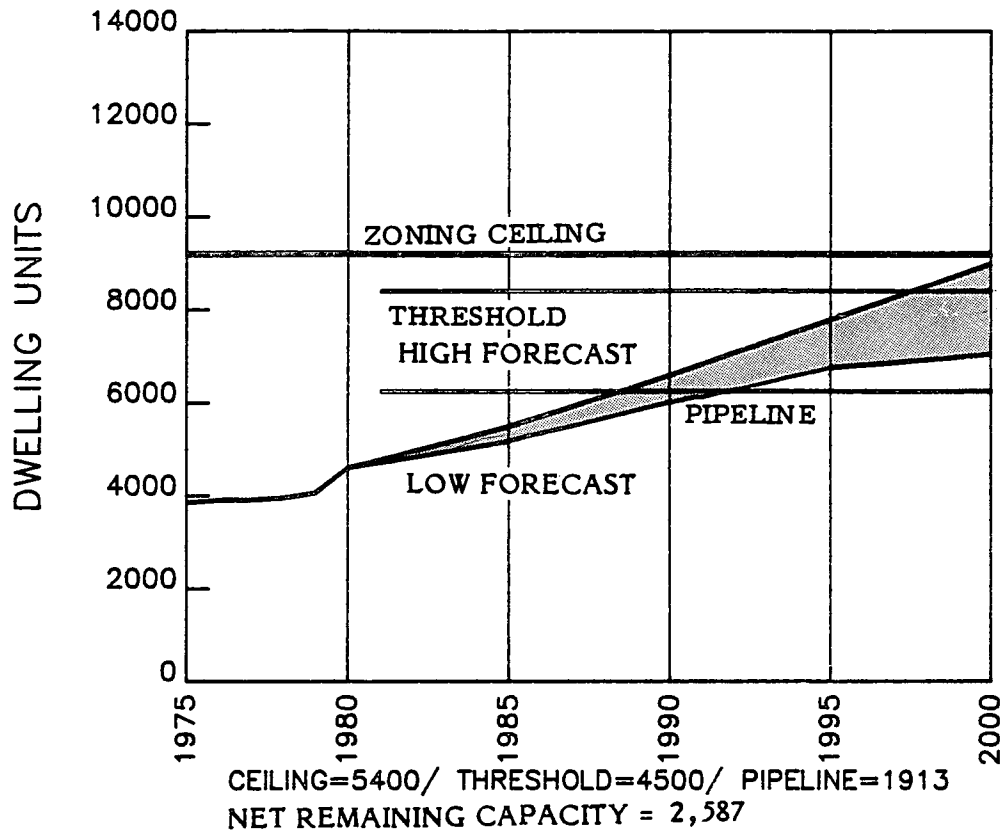
READING STAGING CHARTS

Total dwelling units and employees are indicated on vertical axis. The ceiling, threshold and pipeline numbers at the bottom of the charts use 1977 as their base year. Add the ceiling, threshold and pipeline numbers to the 1977 base to obtain the position of the appropriate line on the staging chart.

Net remaining capacity is calculated by subtracting the pipeline from the threshold. Where the pipeline already exceeds the threshold, the net remaining capacity is zero.

The shaded area on the chart represents the range between the high and low forecast.

OLNEY POLICY AREA



OLNEY

Existing Conditions

Transit Availability: The Olney area is currently served by regional bus lines on Georgia Avenue, New Hampshire Avenue and Route 108. Metrobus service is increased incrementally in response to increasing demand. A park-n-ride lot, which is served by Metrobus at Norbeck Road and Georgia Avenue, has recently opened.

The State Highway Administration has recently completed an intersection improvement at Route 108 and Georgia Avenue and a widening of Georgia Avenue between Bel Pre Road and Norbeck Road. A 250 car park-n-ride lot has been constructed at Georgia Avenue and Norbeck Road by the SHA.

Critical Intersections and Roadway Segments: Existing Georgia Avenue, between Norbeck Road and Route 108, is inadequate and unable to handle the future traffic volumes based on the planned development in the Olney area. The Georgia Avenue and Emory Lane intersection would also require a capacity improvement.

Programmed Transportation Improvements

The County FY 82-87 CIP includes two roadway improvement projects: Georgia Avenue improvement between Norbeck Road and Route 108, and an intersection improvement at Georgia Avenue and Emory Lane.

Thresholds and the Relationship to Planned Development

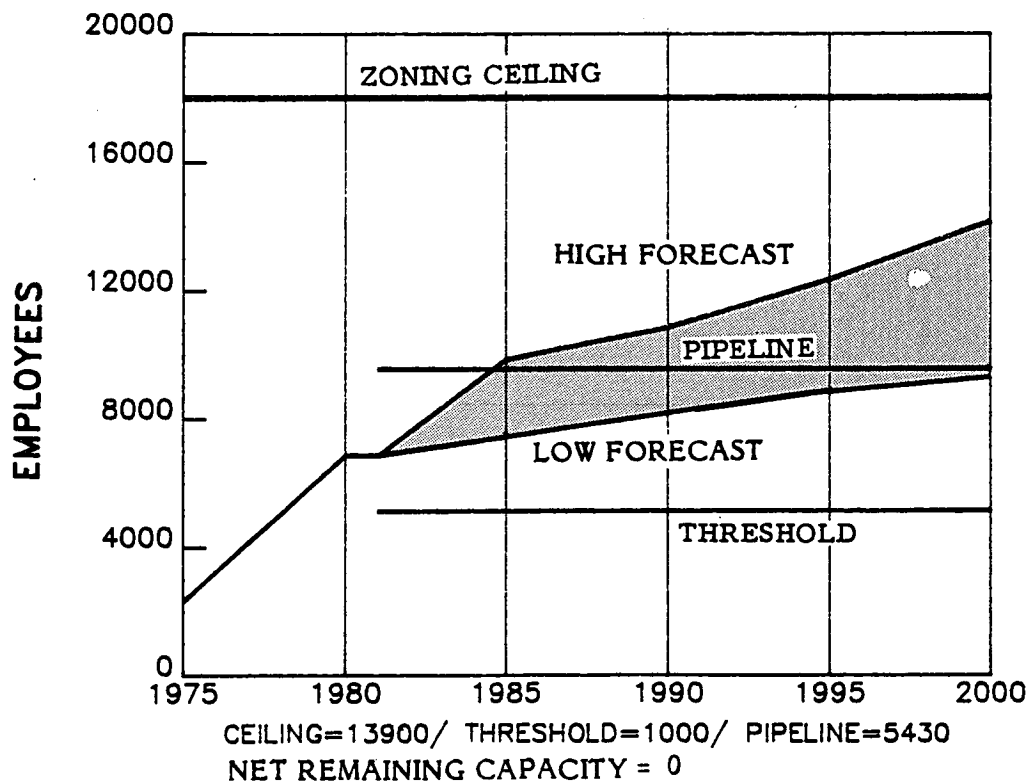
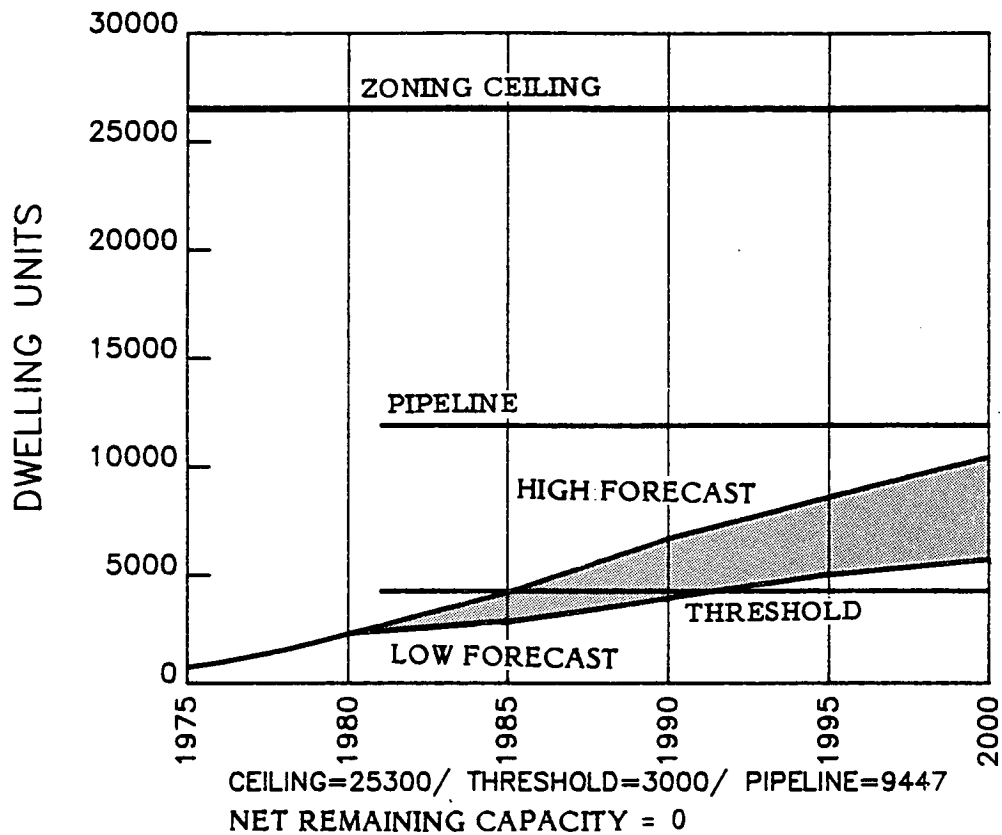
The widening of Georgia Avenue and its intersection improvement included in the current County CIP is of a somewhat lower standard than that envisioned in the Olney Master Plan. As such, a dwelling unit development threshold of 4,500 is recommended, which is less than the Stage II of the Olney Plan. A threshold of 3,000 employees is also recommended.

Considerations for the Future

Areas of Local Congestion: The area feeding into Georgia Avenue at Emory Lane is the only potential local congestion problem currently identified. The intersection of Georgia Avenue and Norbeck Road had been congested for the past several years but the recent improvements by the SHA now provide an acceptable level of service.

Potential Further Transportation Improvements: Several minor intersection improvements along Route 108 and Georgia Avenue are projected in conjunction with planned development subdivisions. The master plan recommends a four lane divided road as an improvement for Georgia Avenue.

GERMANTOWN WEST POLICY AREA



GERMANTOWN WEST

Existing Conditions

Transit Availability: Since June 1980, MCDOT Ride-On Community Bus is serving the west part of this area from the Lakeforest Mall in Gaithersburg via Frederick Avenue, Middlebrook Road and Route 118. Regional bus service should reach this area when Metrorail opens to Shady Grove in late 1983.

Critical Intersections and Roadway Segments: There will be intersection capacity problems at Route 118 and Aircraft Drive and Route 118 and Middlebrook Road when developer plans materialize into actual development. Also, Route 118 between Middlebrook Road and Aircraft Drive will have a capacity problem.

Programmed Transportation Improvements

The current County FY 82-87 CIP includes the Great Seneca Highway and bridge replacement project on Waring Station Road over the B&O Railroad. Also, as a transit-related project, the CIP includes the Germantown Commuter Rail Station project for County participation in improving the rail passenger station at Germantown as part of the MCDOT commuter rail improvement program.

Thresholds and the Relationship to Planned Development

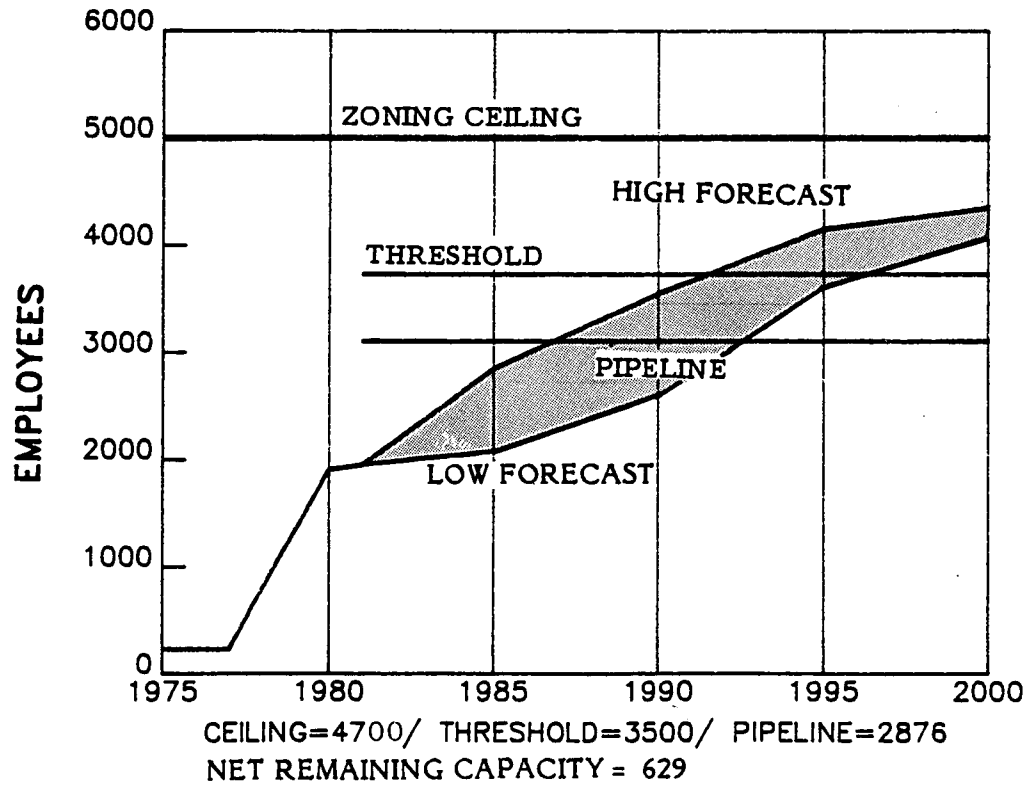
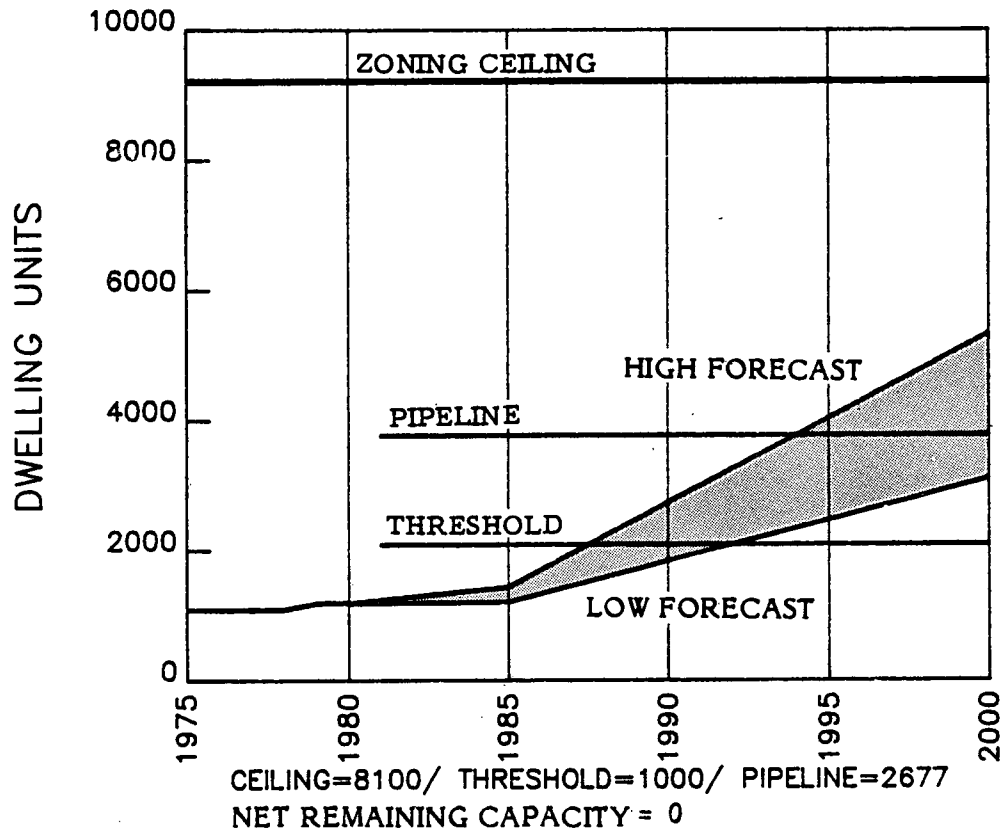
This area has a large number of sewer authorizations for residential as well as non-residential development as a result of substantial subdivision activity for the past several years. The recommended thresholds for this area are 3,000 dwelling units and 1,000 employees. For both residential and employment thresholds, the sum of the completions since 1977 and the current sewer authorizations exceed the thresholds by significant amounts. Consequently, transportation improvements (the MD 118 roadway between Middlebrook Road and Aircraft Drive and intersection improvements) are required as a condition for final APF approval for a number of preliminary subdivision plans. The MD 118 roadway improvement project is currently being developed through private contributions and the County may participate at a later stage. This roadway improvement, however, has limited capacity and additional roadway improvements should be identified before additional subdivision plans can be approved. Because these Route 118 improvements are not contained in the current adopted CIP, they will not be counted as adding to the threshold capacity, except for those developers who will contribute to their construction. Details of these road projects and developer contribution will be worked out jointly among the Planning Board staff, County executive staff and participating developers.

Considerations for the Future

Areas of Local Congestion: As previously discussed, it is anticipated that Maryland Route 118 will have intersection improvements at Aircraft Drive, Middlebrook Road and Clopper Road through private developer contributions and construction in order to avoid potential local congestion. The intersection of Clopper Road and Waring Station Road may be shown to be a local congested area if a large residential tract on the north of the B&O Railroad is subdivided.

Potential Further Transportation Improvements: Prior to approval of additional growth envisioned by the Germantown Master Plan Amendment, the following roadway system should be evaluated and necessary improvements should be identified: Maryland 118 interchange ramp capacity, Clopper Road link capacity and Waring Station south of the B&O Railroad. The link capacity should be studied during the local transportation review process.

GERMANTOWN EAST POLICY AREA



GERMANTOWN EAST

Existing Conditions

Transit Availability: Since June 1980, MCDOT Ride-On Community Bus is serving this area from the Lakeforest Mall in Gaithersburg via Frederick Avenue, Middlebrook Road and Route 118. Regional bus service should reach this area when Metrorail opens to Shady Grove in late 1983.

Critical Intersections and Roadway Segments: There are intersection capacity problems at Route 355 and Route 27, Route 355 and Route 118, and potentially Route 355 and Middlebrook Road. Insufficient roadway segment capacity may develop on Route 118 and Route 355 north of Route 118 due to a large number of approved preliminary plans in the immediate area.

Programmed Transportation Improvements

The current County FY 82-87 CIP includes an intersection improvement project at Route 118 and Route 355.

Thresholds and the Relationship to Planned Developments

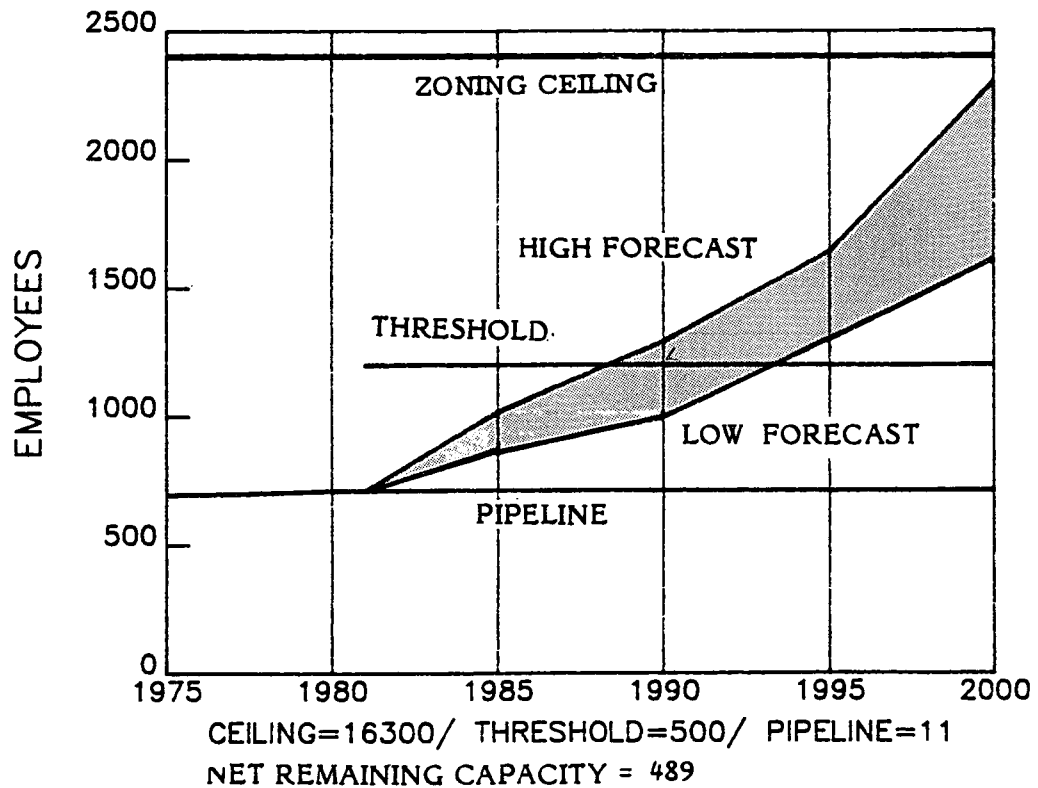
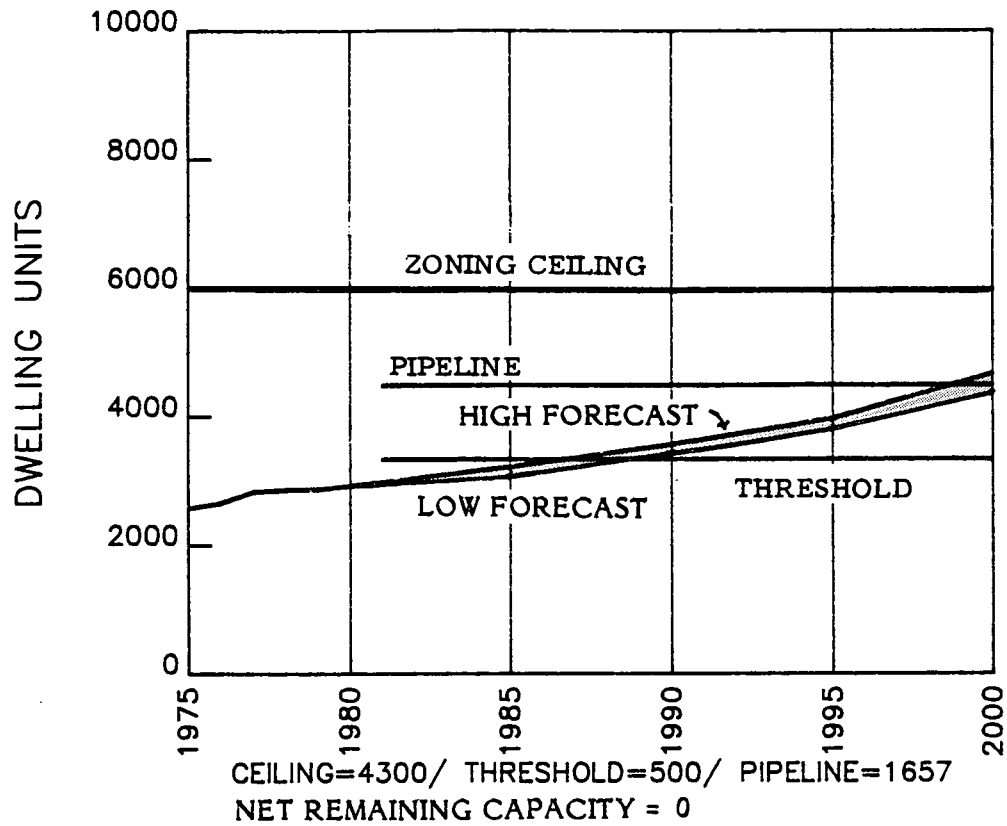
The sum of sewer authorizations and completions since 1977 exceeds the recommended threshold for residential development. Some additional threshold capacity is available for non-residential development. To accommodate a large number of already approved residential preliminary plans and additional non-residential developments, area roadway improvements should be considered.

Considerations for the Future

Areas of Local Congestion: As noted, there are intersection capacity problems at Route 355 and Route 27 and potentially Route 355 and Middlebrook Road. The intersection of Route 355 and Middlebrook Road may be improved partially by the SHA and by the approved area subdivisions.

Potential Further Transportation Improvements: As local developments on the north side of Route 118 are considered, improvements to a segment of Route 355 north of Route 118 may be required to accommodate local growth. Also, Route 118 roadway improvement may be required if large industrial-zoned tract on the north of Route 118 is considered for subdivision approval.

CLOVERLY POLICY AREA



CLOVERLY

Existing Conditions

Transit Availability: Transit service in the Cloverly area is provided only along New Hampshire Avenue. It is unlikely that additional route service can be supported with the relatively low-density development existing throughout most of the area.

Critical Intersections and Roadway Segments: New Hampshire Avenue is two lanes wide north of the Colesville shopping center. New Hampshire Avenue has an average annual weekday traffic volume of 21,400 vehicles in 1980 and Level of Service E is occurring at Good Hope Road and Notley Road. Low levels of service are also occurring at East Randolph Road.

Programmed Transportation Improvements

Recent additions to the Capital Improvements Program are improvements to the intersections at Notley Road and Good Hope Road. The reconstruction and relocation of the New Hampshire Avenue/Bonifant Road/Good Hope Road intersections remain as active projects in the CIP.

Thresholds and the Relationship to Planned Development

The residential threshold is exceeded. However, limited employment threshold capacity is still remaining. The reconstruction of New Hampshire Avenue to four travel lanes will create the potential for the construction of additional dwelling units in the Cloverly area. However, congested conditions of the intersection at New Hampshire Avenue and East Randolph Road will also place a limit on the magnitude of development in Cloverly.

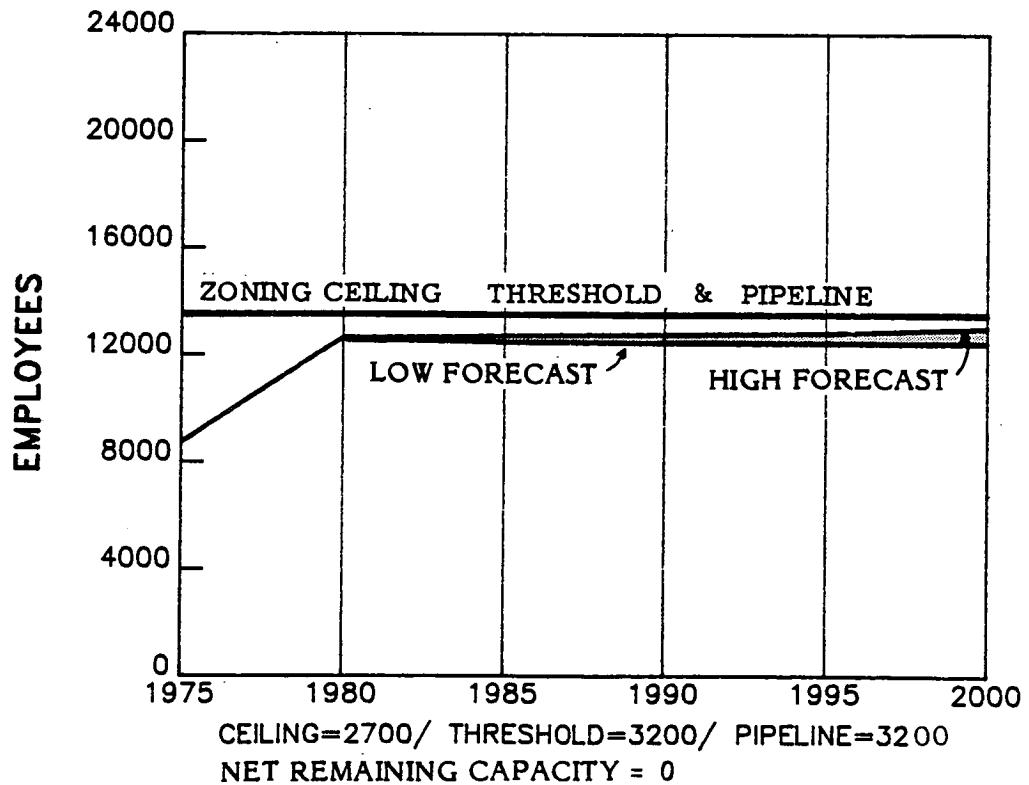
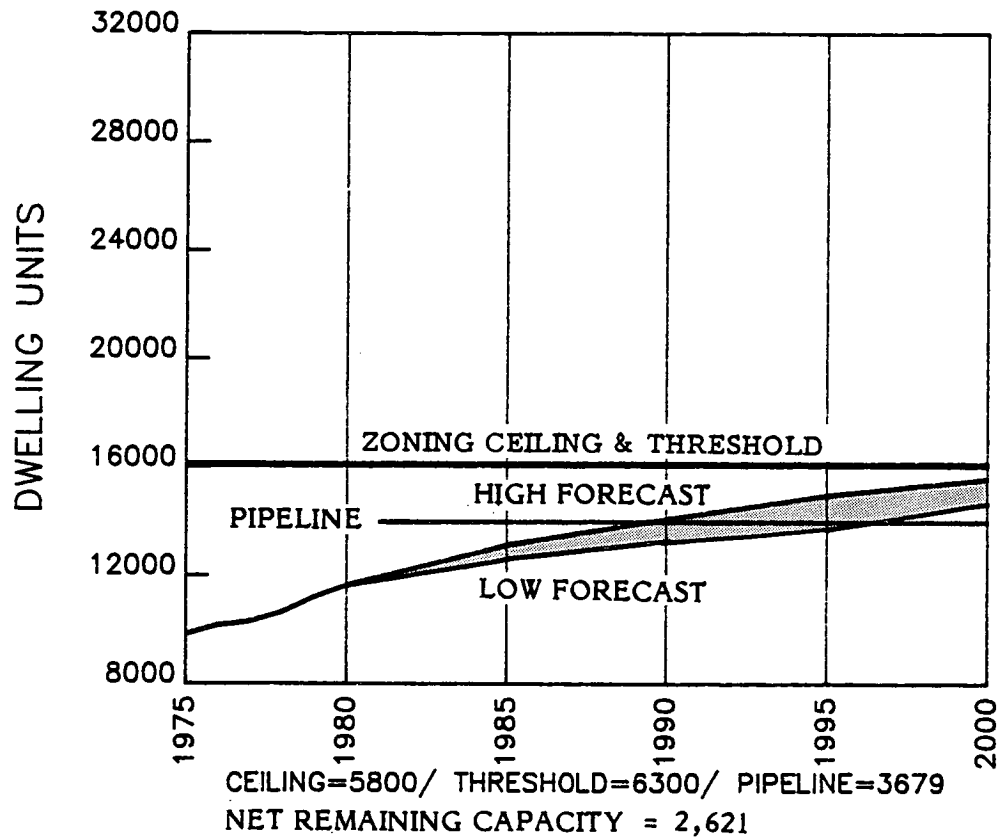
Considerations for the Future

Areas of Local Congestion: As has been discussed, the area of local congestion includes New Hampshire Avenue from East Randolph Road to Bonifant Road.

Potential Further Transportation Improvements: To reduce congestion and allow additional development to take place, New Hampshire Avenue could be widened to four lanes and the intersection at East Randolph Road could be improved as much as possible.

In addition, commuter parking lots, convenient to New Hampshire Avenue, may somewhat alleviate congestion.

POTOMAC POLICY AREA



POTOMAC

Existing Conditions

Transit Availability: Potomac is currently served by the regional bus system on parts of Seven Locks Road, Falls Road, River Road and Bradley Boulevard. The services will be improved before 1985. In addition, fringe parking is available at Montgomery Mall.

Critical Intersections and Roadway Segments: The most severe congestion in the Potomac area occurs along Seven Locks Road along most of its length north of River Road. Some of the congestion will be decreased due to projects in the CIP.

An improvement to the north end of Seven Locks Road was completed during the summer of 1981.

Programmed Transportation Improvements

Three road projects have recently been added to the CIP in this area: (1) Montrose Road Extended, (2) Democracy Boulevard Extended, and (3) a bridging of Fernwood Road over I-270. These projects are fully programmed for construction during the timeframe of the current CIP.

Thresholds and the Relationship to Planned Development

The Master Plan for the Potomac Subregion, adopted in 1980, specified retaining two-lane cross-sections for most roads, even though congestion will occur. It further specified that when the extensions of Democracy Boulevard and Montrose Road are at least 50 percent programmed for construction that the remaining vacant land in the area can develop to the extent allowed by the then proposed zoning. This results in thresholds of approximately 6,300 dwelling units and 3,200 employees. The Plan notes that the full zoning development will result in traffic congestion in excess of standards for that level of policy area.

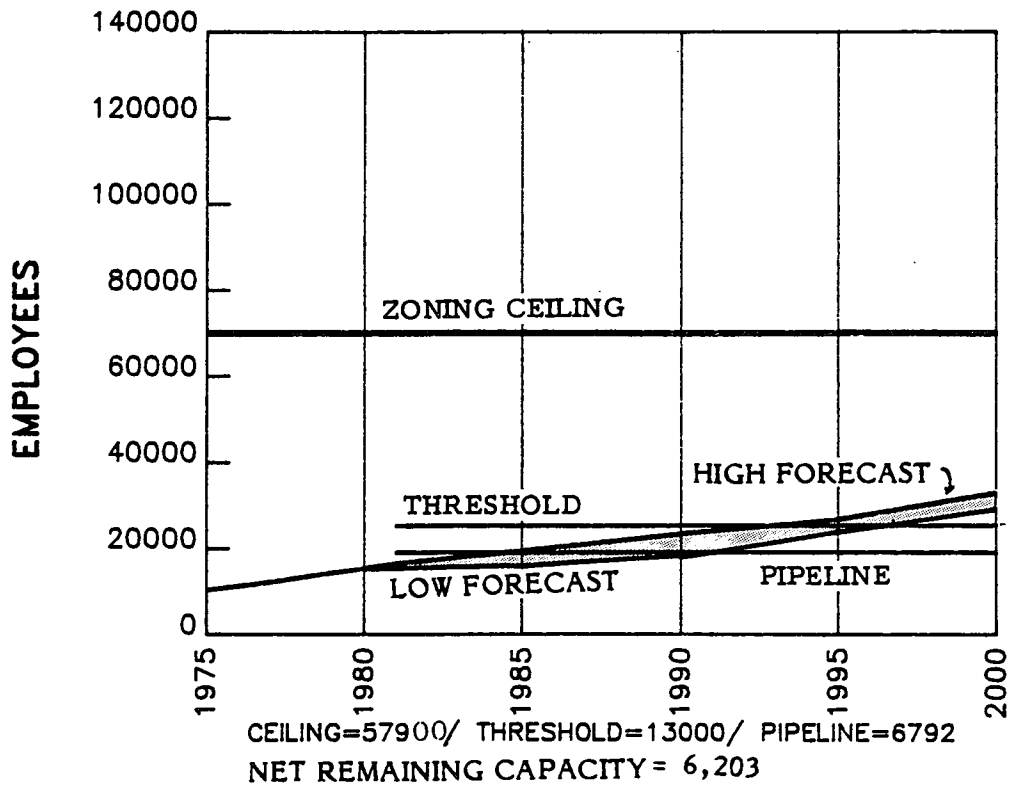
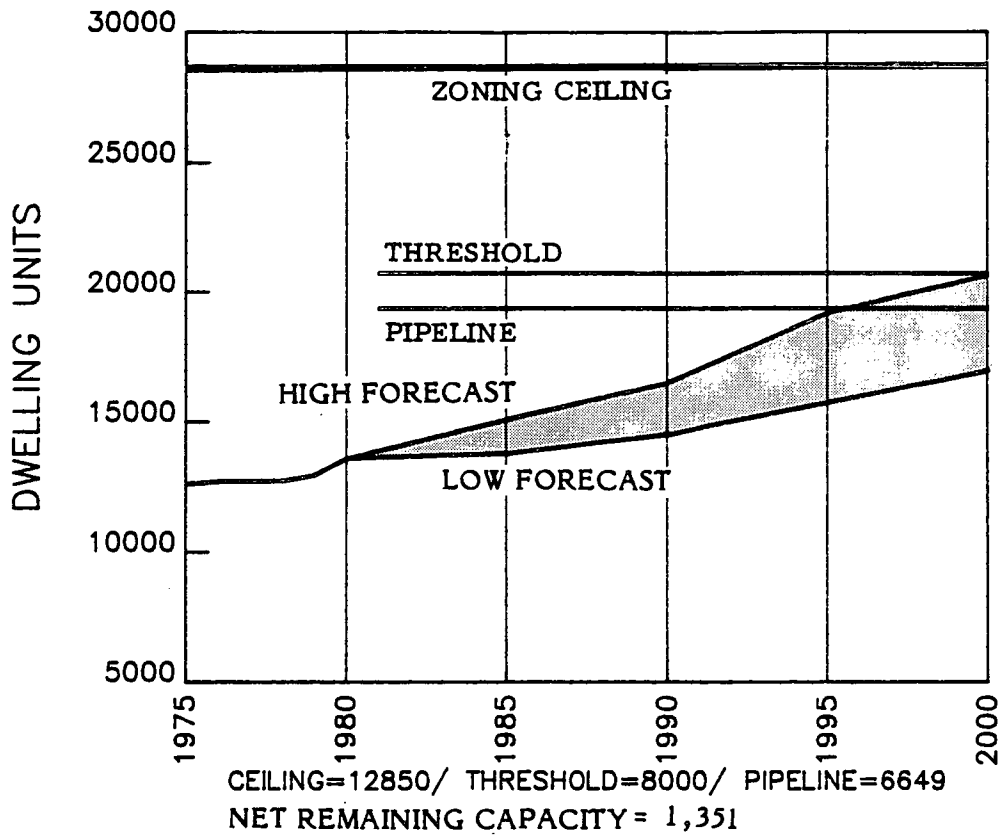
Considerations for the Future

Areas of Local Congestion: In the Potomac Policy Area part of the Potomac Subregion Master Plan, local area congestion reviews will not be required. This is in accord with the master plan which indicates that since the area is in effect a "cul-de-sac" with little through traffic, the Board will pursue a policy of maintaining two-lane roads, with two exceptions. Further, the Board recognized that this will produce levels of traffic congestion during peak periods greater than that considered acceptable in other areas of the County, but feels that this is a legitimate trade-off in order to maintain the character of the area.

Potential Further Transportation Improvements: The Potomac Master Plan recognizes that widening Seven Locks Road to four lanes from Tuckerman Lane to Montrose is a potential future improvement.

FAIRLAND/WHITE OAK

POLICY AREA



FAIRLAND/WHITE OAK

Existing Conditions

Transit Availability: The area is currently served by regional bus service along Route 29, New Hampshire Avenue and across Randolph Road; new service has been recently implemented on Old Columbia Pike. MCDOT Ride-On Community bus service has been also initiated in the West Hillandale area.

Critical Intersections and Roadway Segments: There are several critical roadway segments and intersections in the Fairland/White Oak area. Columbia Pike (US 29) is experiencing low peak-hour levels of service at Randolph Road, Industrial Parkway and Stewart Lane. New Hampshire Avenue, in the vicinity of Hillandale, at Lockwood Drive, and at Randolph Road, is also heavily congested because of high traffic volumes.

Programmed Transportation Improvements

The pace at which developers are submitting preliminary subdivision plans for approval, and existing conditions along Columbia Pike and New Hampshire Avenue, indicate the need for additional road capacity. Some projects are already included in the Capital Improvements Program. Recent additions include intersection improvements to New Hampshire Avenue at Lockwood Drive and the addition of two 12' traffic lanes on US 29 between Musgrove Road and Industrial Parkway. These projects will be constructed through developer participation.

Thresholds and the Relationship to Planned Development

Preliminary plans for approximately 1,400 additional dwelling units and 6,200 additional jobs are permitted given the currently programmed improvements. These thresholds have been selected after careful consideration of their relationship to the traffic capacity of Route 29. This road is a heavily used primary state highway, with a high proportion of its traffic volume originating from, and destined for, areas outside of Montgomery County, especially from Howard County. The traffic impact of the total amount of new development permitted under the recently adopted Eastern Montgomery County Master Plan is relatively less than the potential impact of the total amount of new development possible in Howard County, since Howard County controls its own planning and zoning. However, new development in Howard County has other alternative road routes in this general corridor, such as I-95, Route 1, or the Baltimore-Washington Expressway. Also, the destination of traffic from new development in Howard County, which geographically links to Baltimore as well as Washington D.C., has a higher probability of being dispersed in other directions than does the traffic from new development in eastern Montgomery County, which will tend to interact predominantly with the rest of the Washington metropolitan area.

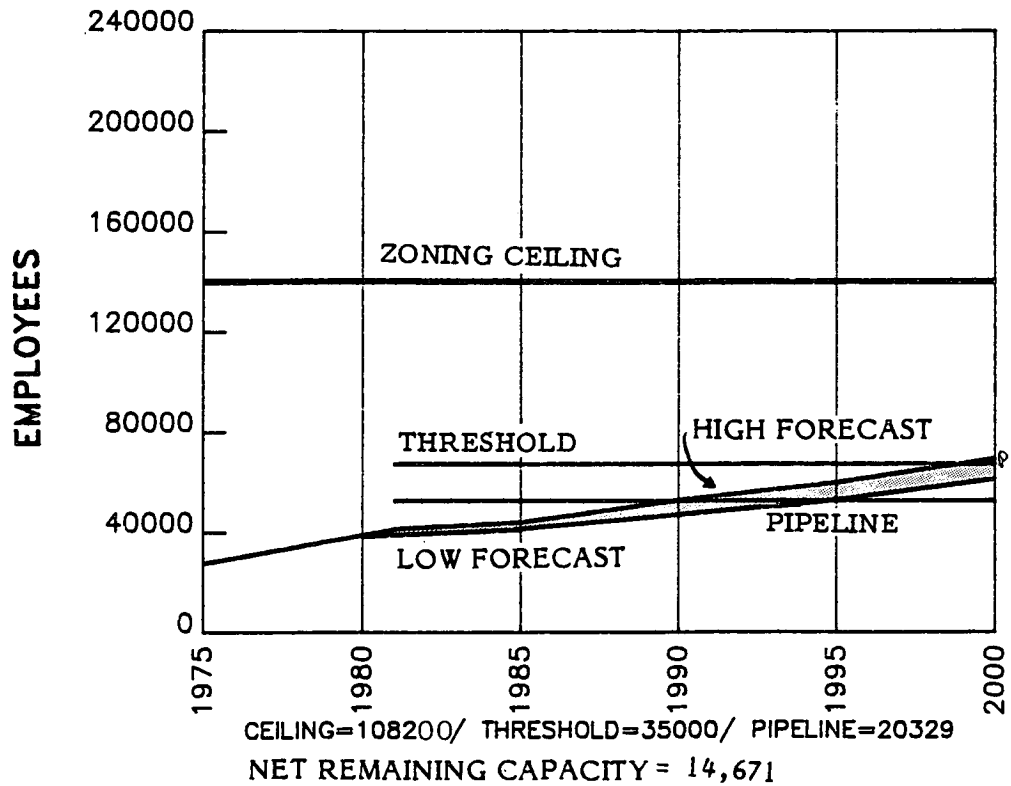
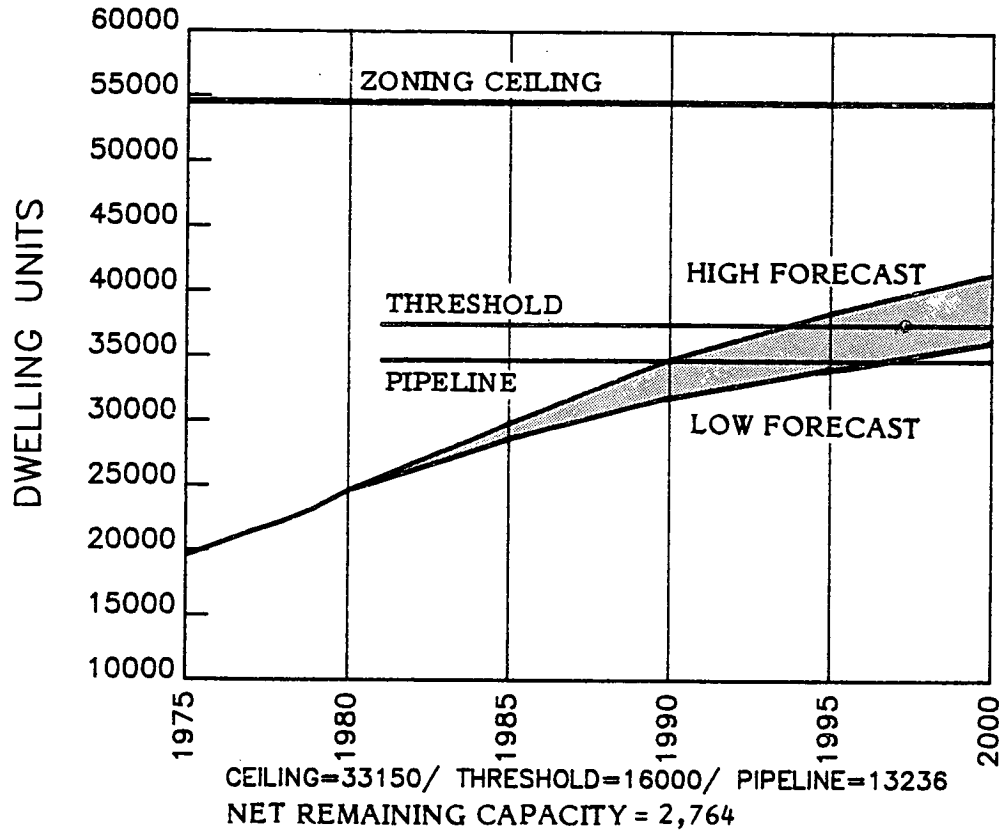
For these reasons, it seems proper to set a level of service standards for this policy area that permits the development anticipated by the Eastern Montgomery Master Plan, so long as it does not excessively jeopardize the functioning of Route 29 as a major transportation artery. The D/E level, which was used in establishing this threshold, is higher than desirable for the currently level of transit service; but it is acceptable because of three factors: 1) the through traffic built-up from Howard County may never actually reach this level, as noted above; 2) the master plan anticipates and encourages additional transit service along Route 29 and; 3) excess congestion can be monitored through the local area review process.

Considerations for the Future

Areas of Local Congestion: As traffic continues to build up on Route 29, due to growth outside the County, the area south of New Hampshire Avenue will potentially experience congestion increase, which will be monitored and controlled as noted.

Potential Further Transportation Improvements: North of New Hampshire Avenue, two additional travel lanes for Route 29 will be necessary to provide the capacity for additional future growth. Ultimately, Route 29 could be widened to six lanes from New Hampshire Avenue up to MD 198. The Eastern Montgomery County Master Plan recommends the construction of three commuter parking lots along Route 29 corridor where ridesharing and mode changes can be easily accomplished especially with inducements such as free parking and express bus service to Metro Stations. Another site is identified in the vicinity of New Hampshire Avenue and Randolph Road. The extension of the Ride-On Minibus service to the White Oak area is another way to better manage the capacity of the existing road network.

GAITHERSBURG POLICY AREA



GAITHERSBURG

Existing Conditions

Transit Availability: Gaithersburg is currently served by private commuter bus, commuter rail and a MCDOT Ride-On bus system. No service is currently provided by Metrobus. Metrorail service is scheduled to be in operation to Shady Grove in late 1983. At that time there will be Metrobus feeder bus service and an expansion of the Ride-On System.

Critical Intersections and Roadway Segments: There are several intersections in the Gaithersburg area operating at or approaching Level of Service E. Such conditions can be found along MD 355, Shady Grove Road and Route 28. In addition, there are several roadway segments with existing inadequate capacity such as parts of Route 28 and MD 355.

Two projects were recently completed: the widening of a section of MD 355 north of Brooks Avenue by the State and County project for the Redland-Fields Road Railroad Bridge.

Programmed Transportation Improvements

The Gaithersburg area has the largest number of programmed transportation improvement projects of any of the areas in the County with nearly twenty projects. The most recent CIP and State Consolidated Transportation Program added four projects: (1) an interchange of I-270 at MD 124 (West Diamond Avenue), (2) the widening of the MD 355 Bridge over the railroad, (3) Watkins Mill Road Bridge at Whetstone Run and (4) improvements to Key West Avenue/Route 28. The specific characteristics of that last project are still in the process of being defined.

Thresholds and the Relationship to Planned Development

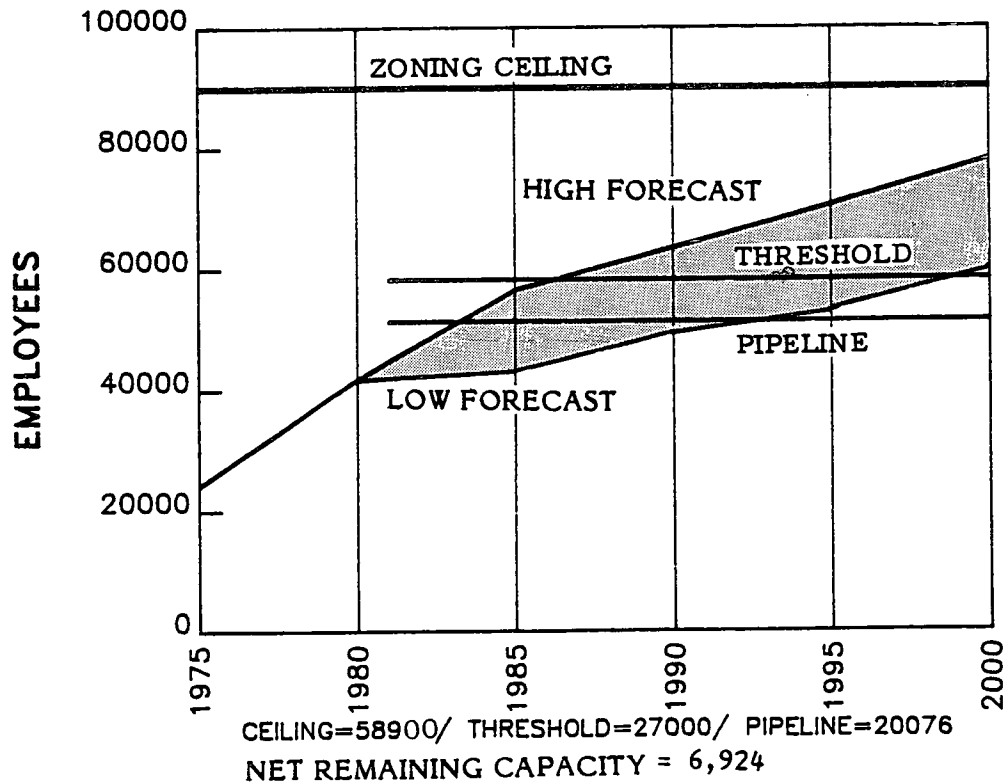
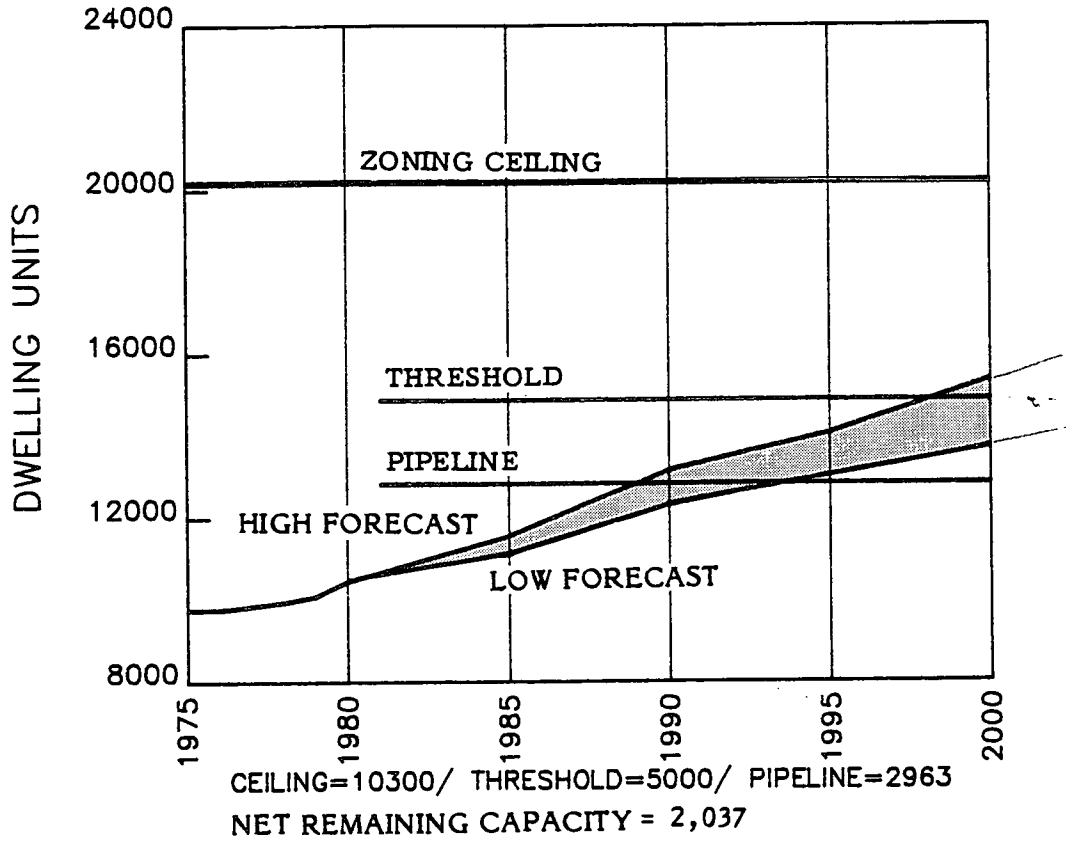
The recommended thresholds for this area are 16,000 dwelling units and 35,000 employees. These thresholds do account for development within the City of Gaithersburg. Subtracting pipeline activity and growth since 1977, capacity exists for subdivision approval of an additional 2,800 dwelling units and 14,700 additional employees. It should be noted that these thresholds account for only a minimal Key West Avenue/Route 28 improvement pending clarification of the project scope.

Considerations for the Future

Areas of Local Congestion: There are several locations within the Gaithersburg area for which local area transportation review will be required. Among these are (1) the Shady Grove Road and I-270 interchange area, (2) Shady Grove Road east of I-270, (3) along Route 28 west of Rockville, (4) in the vicinity of the Montgomery Village Avenue/MD 355 intersection and (5) areas near the County Airpark and the Route 115/124 intersection.

Potential Further Transportation Improvements include: (a) I-370, including an extension west of I-270, (b) widening of I-270, (c) the full programming of Route 28 relocated, (d) the full programming of the Eastern Arterial, and (e) other access and circulation projects.

NORTH BETHESDA POLICY AREA



NORTH BETHESDA

Existing Conditions

Transit Availability: The North Bethesda area is well served by regional bus service, some MCDOT Ride-On service, commuter rail service from Garrett Park, two fringe park and ride lots, as well as express bus service to and from the Silver Spring Metro Station via the Capital Beltway. Metrorail service will begin in late 1983 at Grosvenor, White Flint, and Twinbrook and will be augmented by a restructured bus system feeding the stations and their immediate vicinities.

Critical Intersections and Roadway Segments: There are many intersections in the North Bethesda area at or approaching Level of Service E. Such conditions can be found along Montrose and Randolph Roads, Rockville Pike, Old Georgetown Road, Democracy Boulevard and Twinbrook Parkway.

Programmed Transportation Improvements

Some of these congestion conditions may be improved either temporarily or over the long term by the programmed transit and roadway improvement projects such as the extension of Tuckerman Lane and transit access projects in the vicinity of the White Flint Station. The relatively large number of projects in this area are intended to relieve existing problems, provide necessary access to the Metro Stations and to serve future development. Three road projects have recently been added to the CIP in this area: (1) Fernwood Road Bridge over I-270, (2) Ritchie Parkway from Seven Locks Road to Rockville Pike, and (3) Aspen Hill Road Extended. These projects are fully programmed for construction during the timeframe of the CIP.

Thresholds and the Relationship to Planned Development

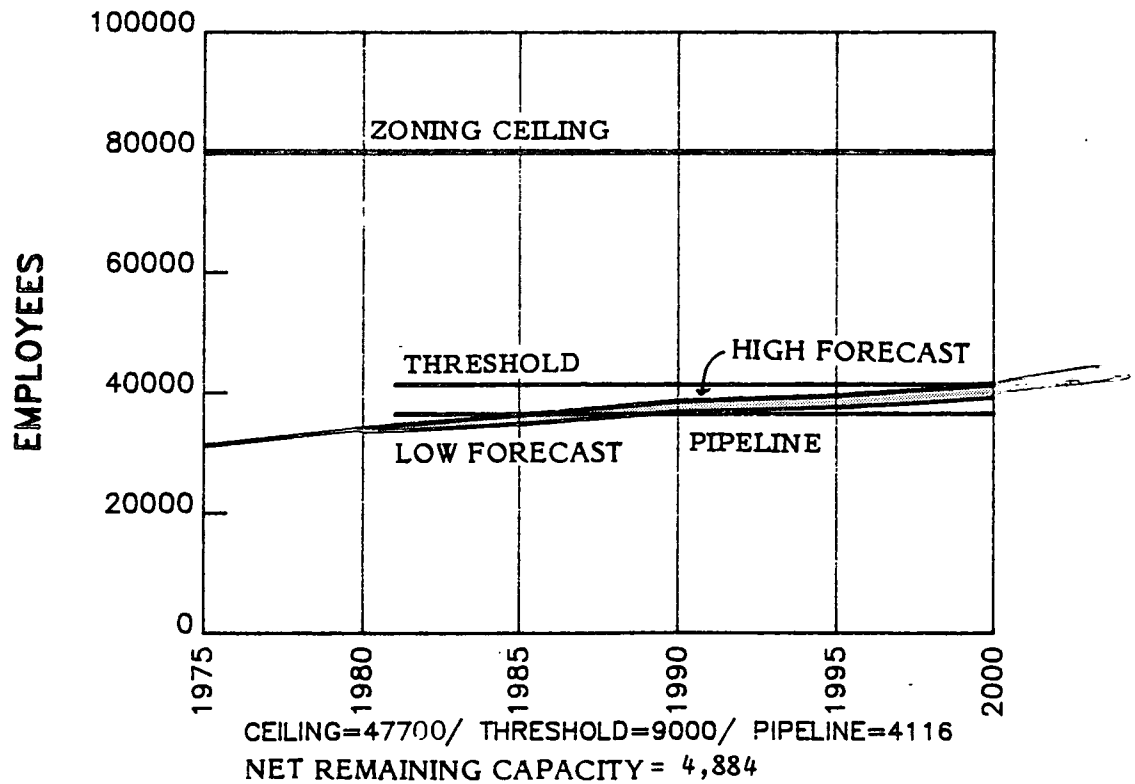
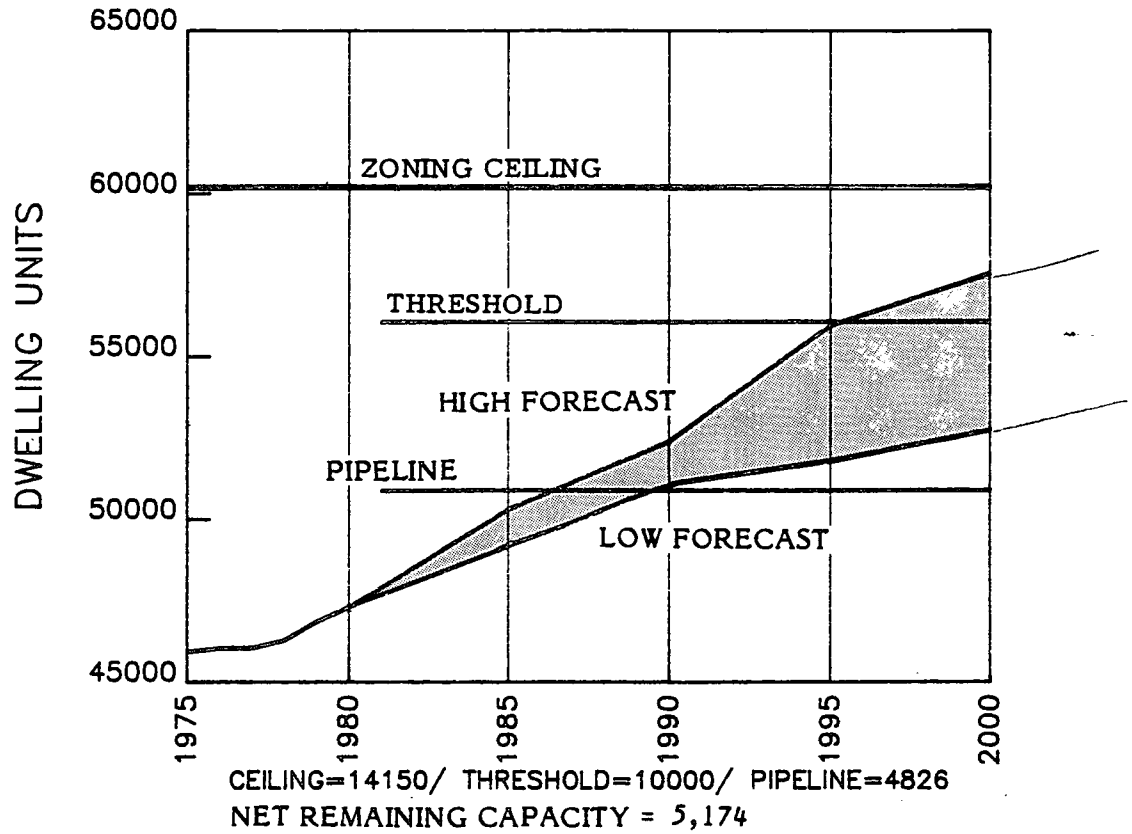
The recommended thresholds for this area are 5,000 dwelling units and 27,000 employees. The North Bethesda Policy Area contains only the planning area of North Bethesda/Garrett Park. The thresholds do not include development within the City of Rockville since the City has its own planning and zoning powers and that the Rockville Policy Area is approximately equal to the maximum expansion limits of the City. Subtracting the pipeline and growth since 1977 from the threshold will allow the approval of 2,000 additional dwelling units and about 5,700 additional employees.

Considerations for the Future

Areas of Local Congestion: There are several locations within the North Bethesda area for which local transportation congestion reviews will be expected to be required. Among these are Davis Tract, Montrose Road/East Jefferson Street and Twinbrook Parkway locations. A recent subdivision case near Montrose Road and East Jefferson Street was approved on the condition suggested by the developer to widen some of East Jefferson Street in order to better meet local congestion.

Potential Further Transportation Improvements: The project planning study by the State Highway Administration for the Rockville Facility may identify feasible transportation improvements which could further increase the threshold in this area.

KENSINGTON/WHEATON POLICY AREA



KENSINGTON/WHEATON

Existing Conditions

Transit Availability: This area is well served by regional bus, several MCDOT Ride-On routes, commuter rail service, a park-n-ride lot, as well as express bus connection to the Silver Spring Metrorail Station. Construction of The Glenmont Line, north of Silver Spring started last year. The remainder is programmed for construction within the CIP. The extension is currently scheduled to be operating in 1987.

Critical Intersections and Roadway Segments: There are several intersections in the area currently operating at Level of Service E and about a dozen at Level of Service D. Most of these congested conditions occur along Randolph Road, Georgia Avenue, Connecticut Avenue, Viers Mill Road, and University Boulevard.

The State Highway Administration recently completed the widening of Georgia Avenue between Bel Pre and Norbeck Roads.

Programmed Transportation Improvements

There are few projects fully programmed for construction in the northern part of this area and in the vicinity of the transit stations. The Layhill Road project, for which the State has been conducting a project planning study, is in the program with less than 50 percent construction funding.

Thresholds and the Relationship to Planned Development

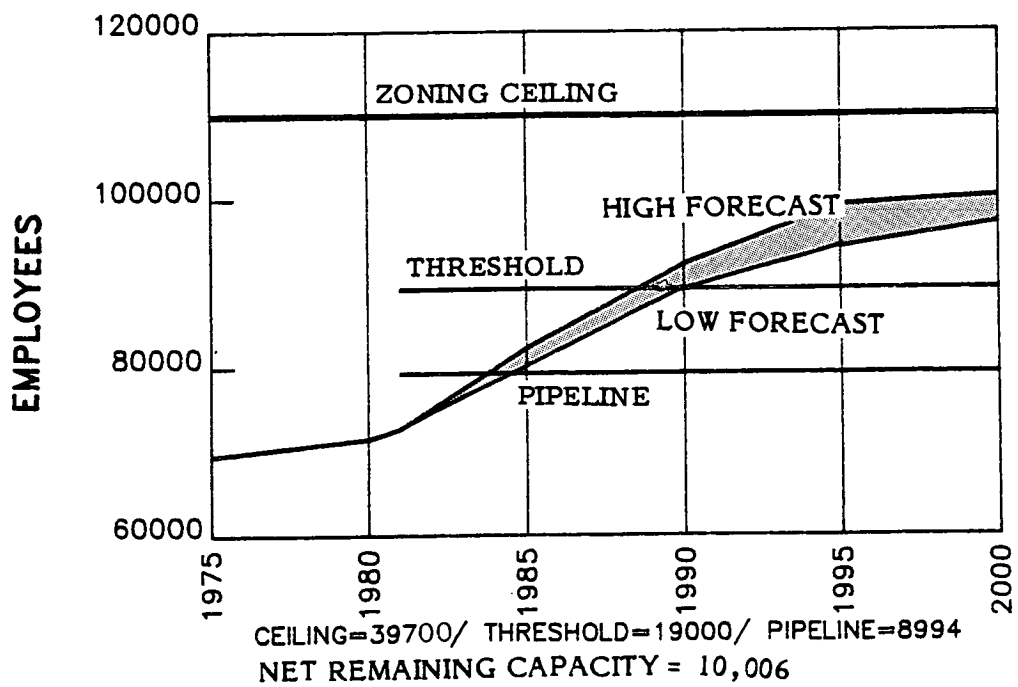
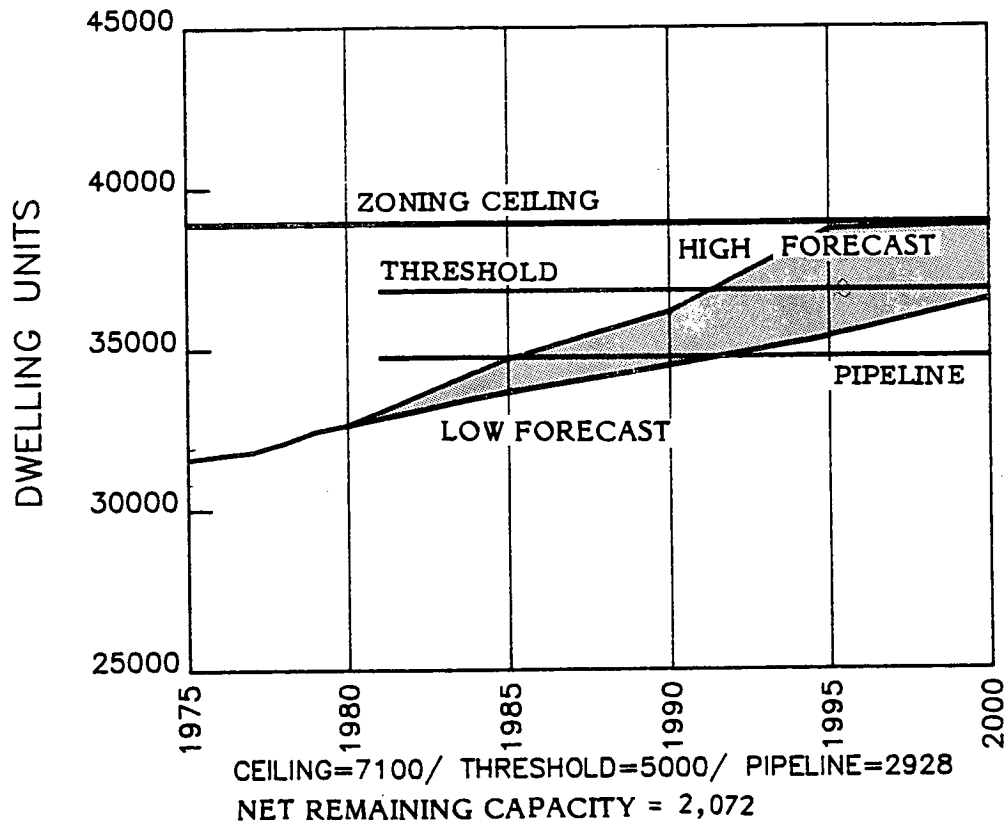
The thresholds for this area recommend 10,000 dwelling units and 9,000 employees. Subtracting the pipeline and growth since 1977 from the thresholds permits an additional 4,300 dwelling units and 2,700 employees.

Considerations for the Future

Areas of Local Congestion: There are several locations within the Kensington/Wheaton Area for which local area transportation reviews will be required. Among these are Kensington Business District, Wheaton Central Business District, Glenmont Business District, Randolph and Viers Mill, Bel Pre and Georgia and Georgia and Dennis Avenue locations.

Potential Further Transportation Improvements: The programming of the Layhill Road widening could add to the threshold capacity and reduce the potential for inadequate local conditions. The project planning study by the State Highway Administration for the Rockville Facility may identify feasible transportation improvements which could further increase thresholds in this area.

BETHESDA POLICY AREA



BETHESDA

Existing Conditions

Transit Availability: This area is served by regional bus and will shortly have a full range of transit services with the opening of the Metrorail line to Shady Grove in late 1983. Stations serving the Bethesda area will be at Friendship Heights, downtown Bethesda, and at the Medical Center. The rail service will be augmented by a restructured Metrobus service feeding the stations and their immediate vicinities as well as by the initiation of MCDOT Ride-On community bus service.

Critical Intersections and Roadway Segments: There are many intersections in the Bethesda area which are operating at or approaching Level of Service E. Such conditions are found along River Road, Old Georgetown Road, Wisconsin Avenue, and Connecticut Avenue.

Programmed Transportation Improvements

Some congestion conditions will be improved in the short-term, and possibly the long-term, by the programmed transit and station access improvements. The limited number of projects in this area are intended to provide station access and facilitate local circulation within the Central Business Districts of Friendship Heights and Bethesda. An example of one such project, Woodmont Avenue Extended to the south, was recently programmed for more than 50 percent construction funding within the CIP.

Thresholds and the Relationship to Planned Development

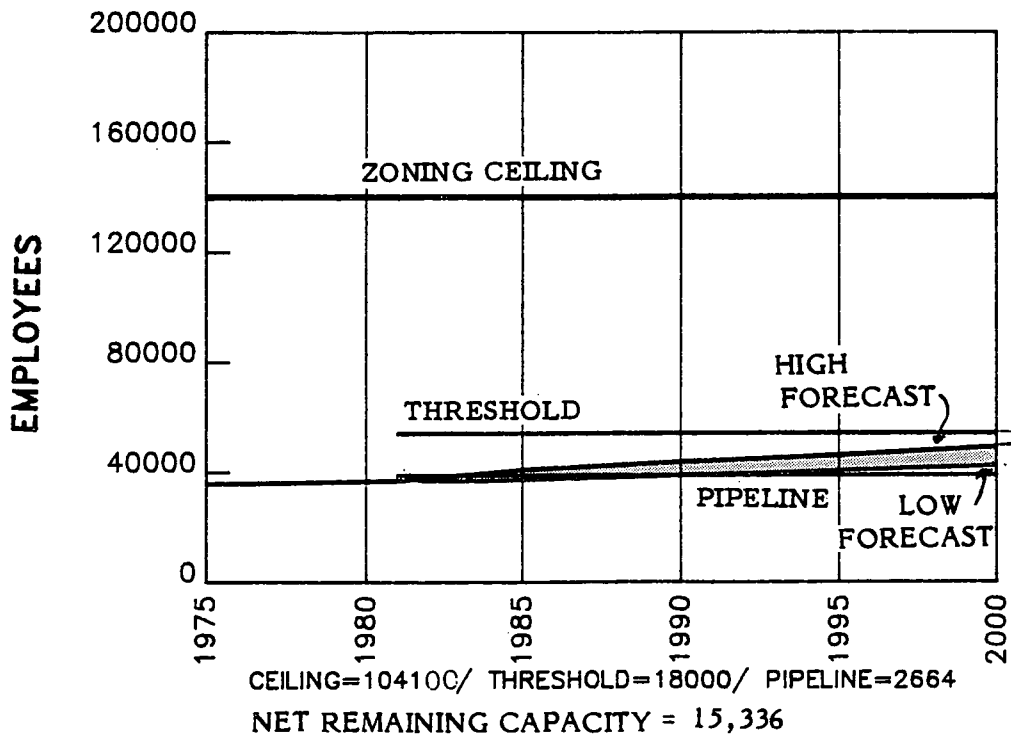
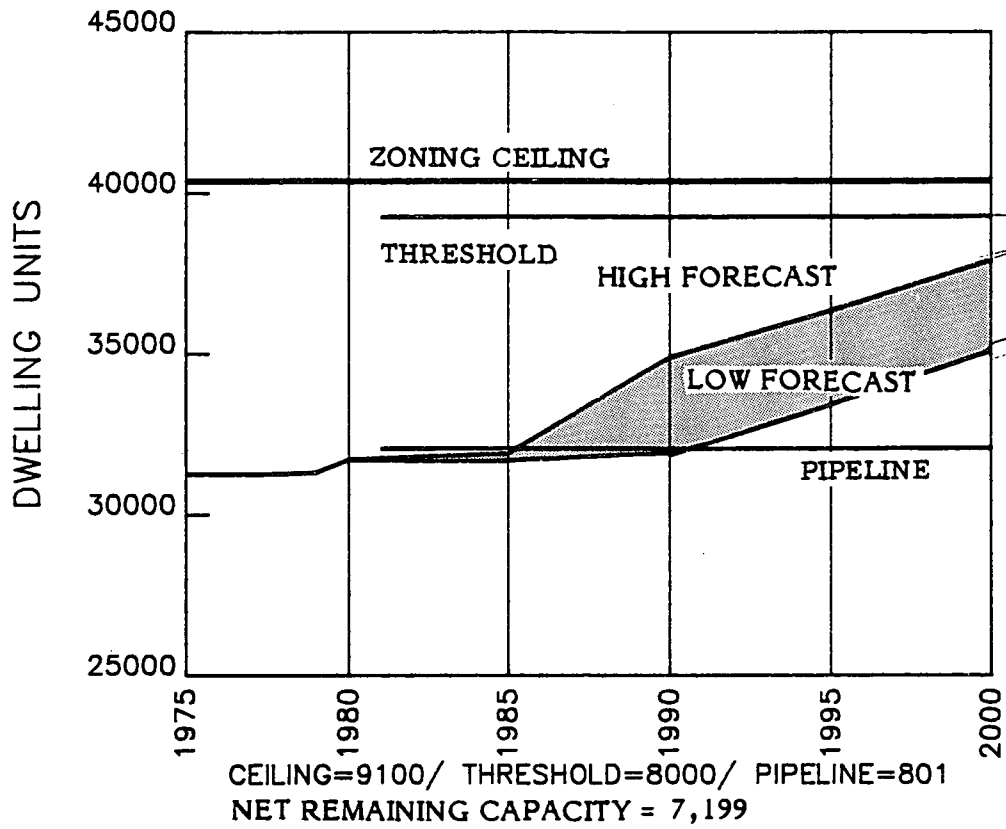
The recommended thresholds for this area is 5,000 dwelling units and 19,000 employees. Subtracting pipeline and growth since 1977 will allow the approval of approximately 2,900 additional dwelling units and about 10,500 employees. The Friendship Heights Sector Plan limits development within that area in absolute terms on a parcel-by-parcel basis. It does not recommend staging or threshold limits and thus the thresholds do not change the amount or timing of development in Friendship Heights. The thresholds for the Bethesda Policy area do not allow more growth than the recommendations in the Bethesda Sector Plan. Therefore, in the Bethesda Sector Plan area part of the Bethesda Policy Area local area transportation reviews will not be required.

Considerations for the Future

Areas of Local Congestion: There are several locations within the Bethesda Policy Area for which local area transportation review will be required. Among these are Westbard, Chevy Chase Lake and Friendship Heights locations.

Potential Further Transportation Improvements: Localized improvements may be identified in potential local area reviews. Improvements to the Capital Beltway which have been under study for many years by the State could provide for increases in the thresholds in this area.

SILVER SPRING/TAKOMA PARK POLICY AREA



SILVER SPRING/TAKOMA PARK

Existing Conditions

Transit Availability: The Silver/Takoma Park area has better transit availability than any other area in the county. The Metrorail stations at Silver Spring and Takoma Park are supported by an extensive feeder bus system. MCDOT's Ride-On Buses also provide feeder service as well as community transit service. The area is also well served by regional bus and commuter rail service.

Critical Intersections and Roadway Segments: There are several intersections in this area that are operating at or approaching Level of Service E. Such conditions are found along East-West Highway, on Georgia Avenue in Montgomery Hills, along Colesville Road and on University Boulevard.

Programmed Transportation Improvements

The only transportation projects in this area are ones intended to facilitate local circulation within the Silver Spring Central Business District.

Thresholds and the Relationship to Planned Development

The recommended thresholds for this area is 8,000 dwelling units and 18,000 employees. Approximately 7,200 additional dwelling units and 15,300 employees could receive subdivision approval. Silver Spring is the subject of a joint revitalization program sponsored by the County, the Planning Board and local groups. Efforts are being undertaken to attract significant new development to the downtown Silver Spring area.

Considerations for the Future

Areas of Local Congestion: There are few locations within the Silver Spring/Takoma Park area for which local area transportation reviews could be expected to be required. Among these are Montgomery Hills and possibly some portions of the CBD.

Potential Further Transportation Improvements: Localized improvements may be identified in potential local area transportation reviews. Improvements to the Capital Beltway which have been under study for many years by the State could provide for increases in the thresholds for this area. In addition, improvements to the transit facilities serving Silver Spring are under study and such improvements could further reduce the potential for too much local congestion.

TABLE 23

LISTING OF HIGHWAY PROJECTS BY POLICY AREA WHICH ARE AT LEAST
FIFTY PERCENT PROGRAMMED FOR CONSTRUCTION IN THE MONTGOMERY COUNTY
FY 1981-87 CIP OR THE MDDOT FY 1982-87 CONSOLIDATED TRANSPORTATION PROGRAM

OLNEY

<u>Roadway Project</u>	<u>Limits</u>	<u>Implementing Agency</u>
Georgia Avenue	Norbeck Road (MD 28) to MD 108	County
Intersection Improvement	Georgia Avenue at Emory Lane	County

GERMANTOWN WEST

<u>Roadway Project</u>	<u>Limits</u>	<u>Implementing Agency</u>
Great Seneca Highway	Middlebrook Road to Darnestown Road (MD 28)	County
Bridge Replacement	Waring Station Road	County

GERMANTOWN EAST

<u>Roadway Project</u>	<u>Limits</u>	<u>Implementing Agency</u>
Intersection Improvement	Germantown Road (MD 118) at Frederick Ave. (MD 355)	County

CLOVERLY

<u>Roadway Project</u>	<u>Limits</u>	<u>Implementing Agency</u>
Bonifant Road	Layhill Road to New Hampshire Avenue	County
Good Hope Road Realignment	To New Hampshire Avenue and New Bonifant Road	County
Intersection Improvements	New Hampshire Avenue at Notley Good Hope and Norwood Roads	County

POTOMAC

<u>Roadway Project</u>	<u>Limits</u>	<u>Implementing Agency</u>
Seven Locks Road Resurfacing and Realignment	MacArthur Boulevard to Lillystone Drive	County
Fernwood Road Bridge	Over I-270	County
Montrose Road Extended	Seven Locks Road to Falls Road	County
Democracy Boulevard Extended	Seven Locks Road to Kentsdale Drive	County

FAIRLAND/WHITE OAK

<u>Roadway Project</u>	<u>Limits</u>	<u>Implementing Agency</u>
Sandy Spring Road (MD 198)	US 29 to I-95	State
Randolph/East Cherry Hill Road	US 29 to Prince Georges Line	County
Subdivision Participation	New Hampshire Avenue at Lockwood Drive	County/Developer
Columbia Pike (US 29)	Industrial Parkway to Musgrove Road	County
Intersection Improvement	US 29 at Randolph/East Cherry Hill Road	County

GAITHERSBURG

<u>Roadway Project</u>	<u>Limits</u>	<u>Implementing Agency</u>
Frederick Avenue (MD 355)	Shady Grove Road to South Summit Avenue	State
Quince Orchard Road	Darnestown Road (MD 28) to Clopper Road	State/County
Frederick Avenue (MD 355)	South Summit Avenue to Chestnut Street	State
I-270 Interchange	East West Diamond Avenue (MD 124)	State
Crabbs Branch Way	Shady Grove Road to Redland Road	County

GAITHERSBURG (Cont'd.)

<u>Roadway Project</u>	<u>Limits</u>	<u>Implementing Agency</u>
Eastern Arterial	Montgomery Village Avenue to Shady Grove Road	County
Fields Road	Piccard Drive to MD 355	County
Fields Road	Muddy Branch Road to Shady Grove Road	County
Gaither Road	Shady Grove Road to Fields Road	County
Great Seneca Highway	Middlebrook Road to Darnestown Road (MD 28)	County
Longdraft Road	Quince Orchard Road to Clopper Road	County
Omega Drive	Fields Road to Key West Avenue	County
Shady Grove Road	I-270 to Briardale Road	County
Shady Grove Road Bridge & Interchange Improvements	at I-270	County/State
Key West Avenue/Route 28	Shady Grove Road to Darnestown Road	County/Developer
Watkins Mill Road Bridge	at Whetstone Run	County/City
Clopper Road	Firstfield Road to Quince Orchard Road	Gaithersburg
Russell Avenue	Watkins Mill Road to Montgomery Village Avenue	Gaithersburg

NORTH BETHESDA

<u>Roadway Project</u>	<u>Limits</u>	<u>Implementing Agency</u>
Veirs Mill Road Bridge (MD 28)	MD 355 to Woodburg Avenue	State
First Street Extended	MD 355 to Veirs Mill Road	Rockville
Gude Drive Extension	MD 355 to Research Boulevard	Rockville/County
East Gude Drive	MD 355 to Southlawn Boulevard	County

NORTH BETHESDA (Cont'd.)

<u>Roadway Project</u>	<u>Limits</u>	<u>Implementing Agency</u>
Research Boulevard Connection	to Gude Drive	Rockville
Tuckerman Lane	Old Georgetown Road to MD 355 and Metro Station	County
Transit Access Projects	Several Projects near White Flint and Twinbrook	County
Fernwood Road Bridge	Over I-270	County
Ritchie Parkway	Seven Locks Road to MD 355	Rockville/County/State/Developer
Aspen Hill Road Extended	Veirs Mill Road to Twinbrook Parkway	County

KENSINGTON/WHEATON

<u>Roadway Project</u>	<u>Limits</u>	<u>Implementing Agency</u>
Norbeck Road (MD 28)	Bauer Drive to Georgia Avenue	State
Bel Pre Road	Georgia Avenue to Layhill Road	County
Transit Station Access Projects	Glenmont, Wheaton and Forest Glen Stations	County/State

BETHESDA

<u>Roadway Project</u>	<u>Limits</u>	<u>Implementing Agency</u>
East-West Highway Cupplet	Wisconsin Avenue (MD 355) to B & O Railroad	State
Transit Station Access and Business District Circulation Projects	Bethesda and Friendship Heights Stations	County

SILVER SPRING/TAKOMA PARK

<u>Roadway Project</u>	<u>Limits</u>	<u>Implementing Agency</u>
Roeder Road	Spring Street to Fenton Street	County
Bonifant Street	Georgia Avenue to Ramsey Avenue	County

LOCAL AREA TRANSPORTATION REVIEW

1. Introduction

The intent of these procedures in this guideline is to permit the Planning Board to withhold approval of an application, even though it would not exceed the threshold, if it is demonstrated that the development will produce excessive local traffic congestion, which is likely to induce a significant detrimental effect on adjacent land use and which is unlikely to be relieved by alternative routes or modes of travel. It is equally important for the Planning Board to use these procedures to help it develop information which can be used to give guidance to the various Capital Improvement Programs of the implementing agencies.

2. Criteria for Screening Cases for Local Area Transportation Review

Planning staff will use the following criteria to determine whether the applicant needs to submit sufficient information and data on the proposed subdivision to carry out a local area congestion review. To the extent possible, this screening should be carried out prior to a formal subdivision application being submitted to the Development Review Division. It also could be done as part of a preliminary consideration by the Subdivision Review Committee. If the development review staff determines by these screening criteria that a local area congestion review is necessary, the developer's application will not be considered complete until the appropriate information and data is submitted. There are two exceptions regarding conducting a Local Area Transportation Review:

- 1) The Bethesda Policy Area development located within the Bethesda Sector Plan area will be reviewed in accordance with the recommendations of the staging element of the Bethesda Sector Plan, and
- 2) The Potomac Policy Area part of the Potomac planning area will be reviewed in accordance with the adopted Master Plan for the Potomac Subregion.

A Local Area Transportation Review is required, if the combination of the conditions identified in the following paragraphs A & B, A & C or all three are met:

- A. Significantly Sized Project: The proposed development is of sufficient size to have a measurable impact on a specific local area to be considered in a local review. This is taken to mean either a standard of fifty or more dwelling units in the proposed development or a non-residential development which would generate fifty or more peak hour trips according to the appropriate category in the Institute of Transportation Engineers Trip Generation Handbook. It is recognized that in the actual Local Area Transportation Review it could be determined that a trip generation value different from the handbook may be more appropriate. It is presumed that smaller sized subdivisions can only be considered in the area-wide aggregate review of the new overall procedures.

In determining whether or not a total of fifty or more dwelling units or trips are involved for the purpose of applying the requirements of Local Transportation Review, all land at one location within the County available for building development under common ownership or control by an applicant, including that land owned or controlled by separate corporations in which any

stockholder (or family of the stockholder) owns ten percent or more of the stock, shall be included. An applicant shall not avoid the intent of this requirement by submitting piecemeal applications or approval requests for subdivision plats, site or development plans, or building permits. Any applicant may submit a preliminary subdivision plat for approval for less than fifty dwelling units or fifty peak hour trips at any one time provided such applicant must agree in writing that upon the next such application, or request, the applicant will comply with the requirements of Local Transportation Review when the total number of requests at one location has reached fifty or more dwelling units or fifty more trips.

The phrase "at one location" means all adjacent land of the applicant, the property lines of which are contiguous or nearly contiguous at any point, or the property lines of which are separated only by a public or private street, road, highway or utility right-of-way or other public or private right-of-way at any point, or separated only by other land of the applicant, which separating land is not subject to the requirements of local transportation review at the time of application for preliminary subdivision plat approval.

- B. Nearby Congestion: The proposed development is located near roadways, intersections or sets of intersections which are already heavily congested. This is taken to mean a standard of having a critical intersection operating at Level of Service D or lower in the vicinity of the proposed development, or for the development to be located near a roadway segment already identified by the Planning Board for consideration by the State or County for widening and/or upgrading. The Transportation Planning Division is maintaining an Intersection Level of Service Inventory based upon traffic counts collected primarily by MCDOT. The inventory gives the most congested level of service conditions for a one hour period either in the AM or PM. In addition, the SHA periodically conducts aerial surveys which develop estimates of level of service conditions along major state highways, as well as their interchanges or intersections. The Planning Board periodically gives recommendations to both the SHA and the MCDOT regarding specific segments of existing roadways in need of widening or upgrading, as well as roadways on new locations. The most recent set of Planning Board recommendations will be used in this screening process.
- C. Development Level Approaching the Threshold: When the proposed development is added to: (1) completions since the threshold base year and (2) outstanding sewer authorizations; and when the resulting total development is within 5 percent of the approved threshold for the area, this condition for a local area review is met. As an example, if the threshold for an area is 2,000 households, and if the sum of the housing completion, outstanding sewer authorizations and the proposed subdivisions is greater than 1,900, then this condition is met.

3. Findings for Inadequate Facilities

The Planning Board staff report will present findings for each of the categories identified below and give a recommendation relating to the adequacy of the transportation facilities. The Planning Board will use these findings to make its overall findings as to adequacy of public facilities for the proposed development.

- A. Transportation Solutions: Staff will identify the degree to which there are remedial transportation solutions to obtain adequate local transportation capacity. These solutions can include additional traffic engineering or operating changes beyond those currently programmed, major capital improvements beyond those currently programmed, or non-programmed transit or ridesharing activities which would make the overall transportation system adequate.
- B. Degree of Local Congestion: Staff will identify the degree of congestion forecasted for both AM and PM peak hours. Staff will present findings of the degree to which the forecasted traffic exceeds the maximum capacity of the nearby road system. The mid-point of Level of Service E is presumed the condition under which the transportation facilities as a total system are operating at maximum capacity. Critical Lane Volumes higher than the mid point of Level of Service E are deemed to reduce the overall efficiency of the road network. Because the experience of congestion is felt by road users and adjacent land uses before this level is reached, a judgement must be made in each case regarding the degree of detrimental impact that can be tolerated. The degree of local congestion will be considered to be more severe if both the AM and PM peak hour traffic conditions are beyond the mid point of Level of Service E.
- C. Unavoidable Congestion: Staff will identify the degree to which there are alternate routes or paths to serve the traffic associated with the proposed development. If there are no appropriate alternate routes for that traffic to use to avoid the congestion, then it must be assumed that traffic from the proposed development will increase the local area congestion. It is not appropriate to anticipate that the traffic associated with the development would use local streets unless those streets have been functionally classified as being suitable for handling that generated traffic.
- D. Transit Unavailability: Staff will identify the degree to which transit or ridesharing activities are not available to serve the proposed development. If it is physically or fiscally ineffective for the public agencies to provide transit or ridesharing services, then the local congestion, likely to be caused by the proposed development, cannot be significantly absorbed through this alternative mode of travel. If there is sufficient potential for serving the proposed development with transit or ridesharing services, then it is possible that a transit alternative could be developed for modifying the demand contributing to the severe congestion.
- E. Project Related Traffic: Staff will identify the degree to which the congestion problem is directly attributable to the proposed development. Traffic from three sources will be measured: (1) existing traffic, (2) traffic which would be generated by the sum total of all outstanding but unbuilt record plats*, (3) traffic which would be generated by the proposed development itself. The

* Note that the Local Area Review counts Record Plats rather than Sewer Authorizations. This is due to cost and difficulty of securing sewer authorization data on a weekly basis from the WSSC. Staff will consider, as a judgmental factor, the relative relationship between plats and authorizations as of the last previously recorded comparison.

more that traffic from the proposed development contributes to the congestion problem, the greater the severity of the local impact.

4. Method and Preparation of Local Area Transportation Review

The following general criteria and analytical techniques are to be used by applicants in submitting sufficient information and data on a proposed subdivision to demonstrate the expected impact on and use of public roadways by the residents or occupants of said subdivision. In addition to the consideration of existing traffic associated with present development, the applicant shall include in the analyses potential traffic which will be generated by his subdivision and other "nearby" recorded lots to be included in the analyses, and information and data on them, will be supplied to the applicant during the impact review at the Subdivision Review Committee meeting. At this or a subsequent meeting with transportation staff, the following aspects of the traffic impact analysis will also be agreed upon:

- 1) which intersections are to be included in the traffic impact analysis;
 - 2) adequacy of available turning movement counts and need for additional data;
 - 3) period of analysis (AM or PM or both);
 - 4) trip generation rates, especially for commercial development;
 - 5) directional distribution of site-generated and platted traffic;
 - 6) mode split assumptions;
 - 7) programmed projects to be considered in the analysis, along with techniques for estimating traffic diversion to major new programmed facilities;
 - 8) link adequacy and trends in traffic growth; and
 - 9) feasible range of traffic engineering improvements associated with implementing the development.
- A. Trip Generation: Trip generation rates for residential development are shown in the accompanying table. Rates for other land uses or zoning classifications can be obtained from sources such as recent compilations assembled by The Institute of Transportation Engineers and will be provided by the Transportation Planning Staff of the Planning Board. Generated trips for development of mixed land uses will be determined by combining the trips generated by each of the component uses in the mix. Where it can be demonstrated that peak hours for different land uses occur at different times, the single hour that results in the highest total volume on the street system will be controlling.
- B. Peak Hour Percent: A peak hour percent of 10 percent of the daily trips will be assumed for residential development. For other uses, information from other accepted sources such as the Institute of Transportation Engineers publications will be utilized as agreed upon by the staff and applicant.
- C. Peak Hour: The applicants shall use the peak one hour period which occurs during either the 7-9 AM or 4-6 PM periods or both, as agreed to by the staff and applicant.
- D. Trip Distribution: The directional distribution of the generated trips entering and leaving the proposed subdivision via all access points must be justified by the relative locations of other traffic generators (i.e., employment centers, commercial centers, regional or area shopping centers, transportation terminals, etc., and/or the trip table information provided by staff). These

same factors or other factors provided by the Subdivision Review Committee shall be applied to the development under study as well as to other "nearby" subdivision plans in their analyses.

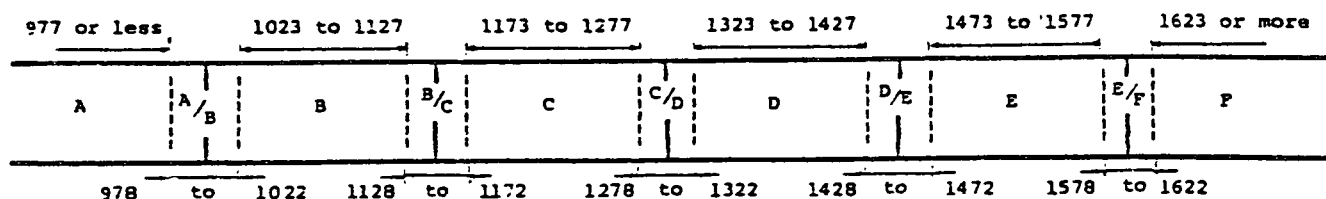
- E. Directional Split: Trips generated by residential uses will be assumed to have 60-70 percent leaving and 30-40 percent entering the proposed subdivision during the morning peak and 60-70 percent entering and 30-40 percent leaving the proposed subdivision in the evening peak. The split for traffic associated with other land uses is to be derived from ITE published information or other accepted studies, as determined by the transportation planning staff and the applicant.
- F. Trip Assignment: The distribution factors shall be applied to the generated trips and the resulting traffic volumes assigned to the road network providing access to the proposed subdivision plus existing and "nearby" future traffic to determine the impact on the adequacy of the transportation facilities. The assignment is to be extended to the nearest major intersection, or intersections, as determined by the Subdivision Review Committee and can include an evaluation of the impact of generated traffic on existing links.
- G. Critical Lane Analysis: At the identified major intersection, or each such intersection, the existing and generated traffic is to be related to the adequacy of the intersection by using the "Critical Lane Volume" technique (see Section J) which shall be updated to maintain consistency with the Highway Capacity Manual revisions. Link volume analysis shall also be related to Highway Capacity Manual standards. The analysis should be carried out for both the AM and the PM peaks and should use traffic data for non-holiday weekdays. If so desired, alternate capacity and level of service analysis techniques can be used to develop supplemental information.
- H. Traffic Data:
 - 1. Traffic volume data is available from either the Maryland Department of Transportation or the Montgomery County Department of Transportation.
 - 2. Data should be adjusted to the current year.
 - 3. If turning movement data is older than three years, or if there are locations for which data is non-existent, data must be acquired by the applicants using their own resources. This is in accordance with the Ordinance and part of the applicant's submission of sufficient information and data, consistent with the decisions reached by the Subdivision Review Committee and Transportation Planning Staff.
 - 4. Intersection traffic counts conducted by the applicant must be manual turning movement counts covering the periods of 7-9 AM and 4-6 PM so as to allow selection of the peak hour within the nearest thirty minutes (e.g., 4:00-5:00, 4:30-5:30, or 5:00-6:00). Inclusion of all 7-9 AM and 4-6 PM turning movement data is required to be submitted as part of the applicant's traffic impact analysis.

- I. Adequate Accommodation of Traffic: The ability of a highway system to carry traffic is expressed in terms of "Service Level" at the critical locations (usually intersection). "Service Level" is defined alphabetically as follows:

- "A" Conditions of free unobstructed flow, no delays and all signal phases sufficient in duration to clear all approaching vehicles.
- "B" Conditions of stable flow, very little delay, a few phases are unable to handle all approaching vehicles.
- "C" Conditions of stable flow, delays are low to moderate, full use of peak direction signal phase (s) is experienced.
- "D" Conditions approaching unstable flow, delays are moderate to heavy, significant signal time deficiencies are experienced for short durations during the peak traffic period.
- "E" Conditions of unstable flow, delays are significant, signal phase timing is generally insufficient, congestion exists for extended duration throughout the peak period.
- "F" Conditions are jammed, full utilization of the intersection approach is prevented due to back-ups from locations downstream.

The following chart indicates the "Critical Lane Volume" ranges to be used in determining "Service Level" for an intersection. Service level volumes for roadway sections and ramps are described in sections eight through ten of the Highway Capacity Manual. ("The Critical Lane Volume" technique is described in Section J.)

Intersection Levels of Service by Critical Lane Volume Ranges



- J. "Critical Lane Volume" Technique: A technical description of the "critical lane volume" technique is given in the January 1971 issue of Traffic Engineering magazine.* The following step by step procedure should be sufficiently descriptive to enable the applicant to utilize the technique at simple two-phase or unsignalized intersections.

* New methods for doing a critical lane summation analysis are proposed in Transportation Review Board (TRB) Circular 212. These guidelines may subsequently be amended to incorporate those new procedures once they are adopted.

The peak hour approaching traffic volume and turning movements for the intersection being analyzed will have been determined in the traffic generation and trip distribution phase of the analysis. At unsignalized intersections, a two-phase operation should be assumed.

K. Procedure:

- Step 1. Note the number of approach lanes from each direction.
- Step 2. Subtract from the total approach volume any right turn volume that operates continuously throughout the signal cycle. (i.e., a free right turn by-pass)
- Step 3. Determine the maximum volume per lane from each approaching using the following table. (Note: Do not count lanes established for exclusive use such as left turn storage lanes - the lane use factor for exclusive use lanes is 1.00)

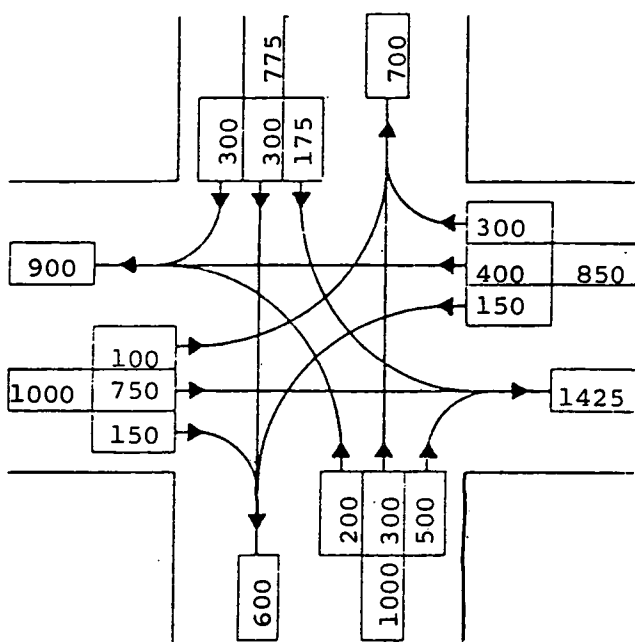
<u>Number of Approach Lanes</u>	<u>Lane Use Factor</u>
1	1.00
2	0.55
3	0.40
4	0.30

- Step 4. Select the maximum volume per lane in one direction (e.g., northbound) and add it to the opposing (e.g., southbound) left turn volume.
- Step 5. Select the maximum volume per lane operating in the opposite direction of the approach selected in Step 4.
- Step 6. The maximum total of Step 4 or Step 5 will be the "critical" volume for phase one (e.g., north-south).
- Step 7. Repeat Steps 4 through 6 for lanes operating in phase two (e.g., east-west).
- Step 8. Sum the "critical" volumes for each phase.
- Step 9. Compare the resultant "Critical Lane Volume" for the intersection with the range table on page 123.

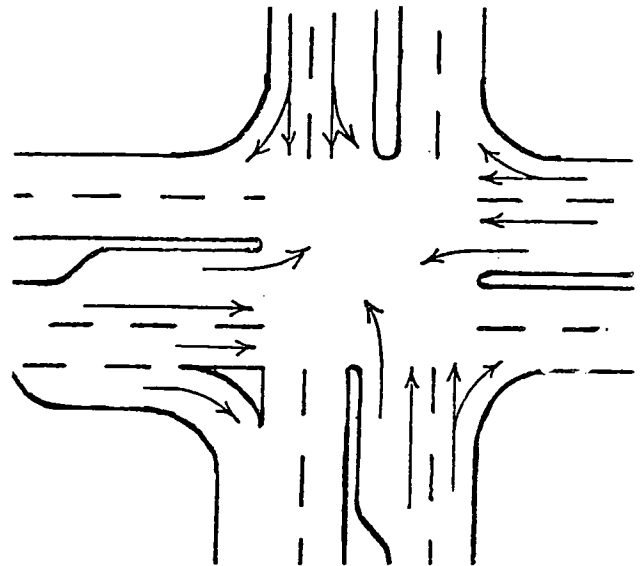
If the intersection under consideration is a complex one with special conditions such as phasing lags, leads, or overlaps, application of the "Critical Lane Volume" technique may require professional assistance such as the aid of consultant traffic engineers or staff from the Maryland Department of Transportation or the Montgomery County Department of Transportation.

"Critical Lane Volume" Technique Example

TURNING VOLUMES



INTERSECTION GEOMETRICS



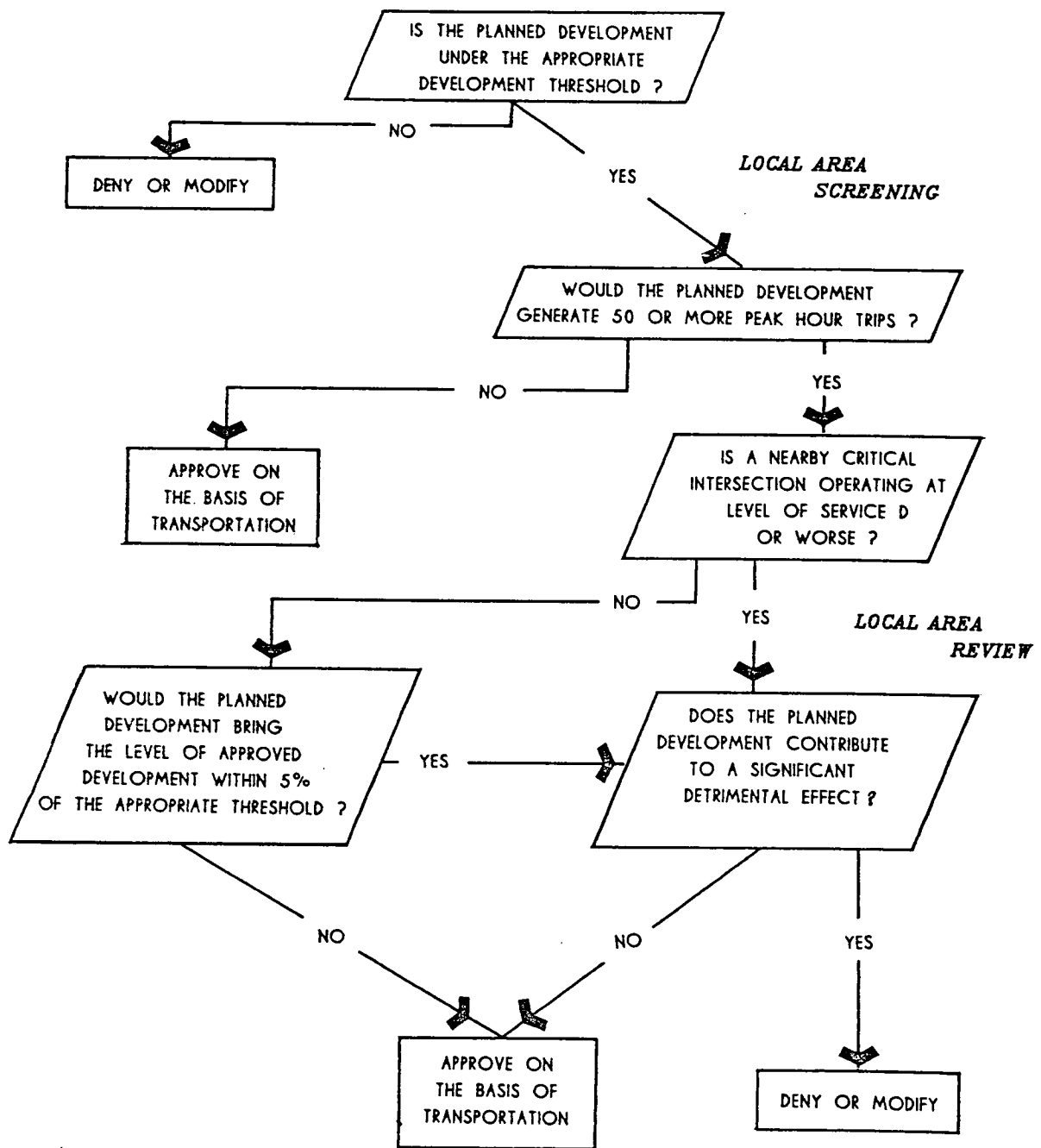
From	Approach Volume	Lane Use Factor	Critical Approach Volume		Opposing Lefts		Critical Lane Volume Per Approach
N	775 ⁽¹⁾	0.55	426	+	200	=	626
S	800 ⁽²⁾	0.55	440	+	175	=	615
S OR	500	1.00	500	+	175	=	675*
E	700 ⁽³⁾	0.55	385	+	100	=	485
W	750 ⁽⁴⁾	0.55	412	+	150	=	562*

*"Critical Lane Volume" = 675 + 562 = 1,237 vph.
1,237 represents Service Level C (From Table on Page 5).

- (1) Approach volume sum of thru's, rights and lefts in 2 lanes.
- (2) For a heavy right turn must evaluate worst of rights in 1 lane or thru's and rights in 2 lanes.
- (3) Approach volume sum of thru's and rights in 2 lanes.
- (4) Approach volume is thru only because of free right and separate left.

Housing Type	Zoning Categories	TRIP Generation Rates
High-Rise Apt.	RH, R-10	5 to 7 trips/day/dwelling unit
Townhouses	RT	6 to 8 trips/day/dwelling unit
Garden Apt.	R-20, R-30	6 to 8 trips/day/dwelling unit
Single-Family	All other residential classes	8 to 10 trips/day/dwelling unit

STANDARD APPROVAL PROCEDURE FOR TRANSPORTATION ADEQUACY



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